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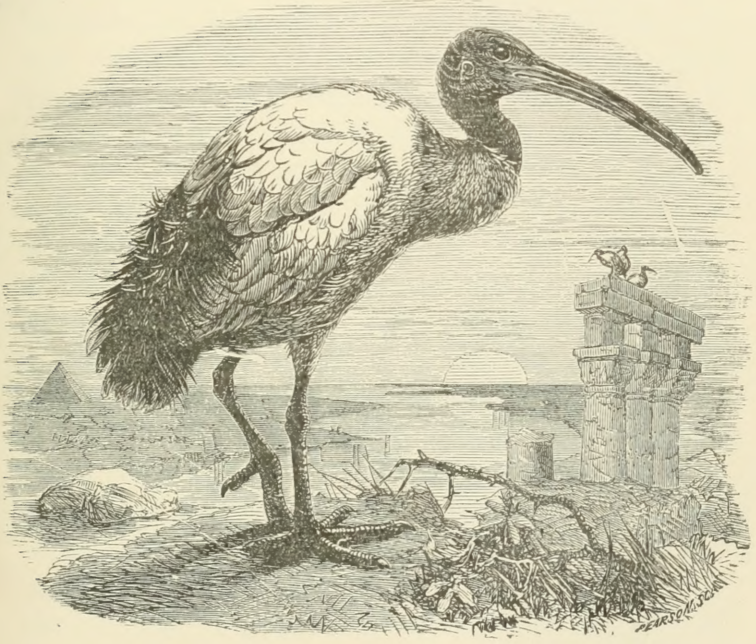
THE IBIS,

A

QUARTERLY JOURNAL OF ORNITHOLOGY.

59.82:06(42)

EDITED BY
PHILIP LUTLEY SCLATER, D.Sc., F.R.S.,
AND
A. H. EVANS, M.A., F.Z.S.



VOL. III. 1909.

NINTH SERIES.

Delectasti me, Domine, in operibus manuum tuarum.

LONDON:
R. H. PORTER, 7 PRINCES STREET, CAVENDISH SQUARE, W.
1909.

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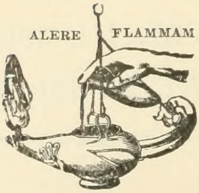
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PREFACE.

The Two-hundred-and-fourth Number of 'The Ibis' concludes the Fifty-first Volume of our Journal. As will be seen by its contents, contributions have by no means failed us, either in quantity or, we believe, in quality. Lieut. Whitehead has shown us that there is still something to be done in British India, especially on its northern confines, which he and Major Magrath have so successfully explored. Mr. Bucknill proves to us that even the Island of Cyprus is not yet thoroughly explored. Africa is evidently still unexhausted, as the discovery of the remarkable novelty described by Mr. Rothschild in the present volume amply testifies. We are also strongly supported in Africa by Mr. Bates in Kamerun and Mr. Nicoll in Egypt, besides other old friends. We have, in fact, excellent assistance in every part of the world as regards Geographical Ornithology. But on the Pterylography and Anatomy of Birds, without an accurate knowledge of which our 'Systema Avium' must ever remain imperfect, we have still few workers to assist us, and we could wish that some of our younger brethren would take up these comparatively neglected branches of our beloved Science. The Editors, while truly thankful to all the Contributors to 'The Ibis,' trust that they may receive a greater number of communications on these special subjects, on which our knowledge is still sadly deficient.

We have called attention to this matter before, but it is of such importance that we do not hesitate to repeat our remarks.

P. L. S.
A. H. E.

3 Hanover Square,
London, W.,
October 1st, 1909.

LIST OF THE MEMBERS

OF THE

BRITISH ORNITHOLOGISTS' UNION.

1909.

[An asterisk indicates an Original Member. It is particularly requested that Members should give notice to the Secretary of the Union, 3 Hanover Square, London, W., of any error in their addresses or descriptions in this List, in order that it may be corrected.]

Date of Election.

1896. Alexander, Boyd, F.Z.S. (late Rifle Brigade); Wilsley, Cranbrook, Kent.

1888. Aplin, Oliver Vernon; Stonehill House, Bloxham, Oxon.

1896. Archibald, Charles F.; 2 Darnley Road, West Park, Leeds.

1896. Arrigoni degli Oddi, Count Ettore, Professor of Zoology, University, Padua; and Ca' oddo, Monselice, Padua, Italy.

5 1901. Arundel, Major Walter B., F.Z.S.; High Ackworth, Pontefract.

1901. Ashby, Herbert; Oakwood Lodge, Chandler's Ford, near Southampton.

1908. Ashworth, Dr. John Wallwork, M.R.C.S., L.R.C.P., F.R.G.S., F.G.S.; Thorne Bank, Heaton Moor, near Stockport.

1897. Astley, Hubert Delaval, M.A., F.Z.S.; Benham Park, Newbury, Berks.

1885. Backhouse, James, F.Z.S.; Daleside, Scarborough, Yorks.

10 1904. Bahr, Philip Heinrich, M.A., M.B., M.R.C.S., L.R.C.P., F.Z.S.; Perrysfield House, Oxted, Surrey.

1901. Bailward, Col. Arthur Churchill, F.Z.S. (R.F.A.); 64 Victoria Street, S.W.

1892. Baker, E. C. Stuart, F.Z.S.; care of Messrs. H. S. King & Co., 65 Cornhill, E.C.; and Shillong, Assam, India.

1901. Baker, John C., M.B., B.A.; Ceely House, Aylesbury, Bucks.

1908. Ball, Crispin Alfred (Sudan Civil Service); Geteina, White Nile Province, Sudan.

15 1889. Balston, Richard James, F.Z.S.; Springfield, Maidstone.

1906. Bannerman, David A.; 11 Washington House, Basil Street, S.W.

Date of Election.

1890. Barclay, Francis Hubert, F.Z.S.; The Warren, Cromer, Norfolk.

1885. Barclay, Hugh Gurney, F.Z.S.; Colney Hall, Norwich.

1889. Barrett-Hamilton, Major Gerald E. H., F.Z.S., 5th Royal Irish Rifles; Kilmanock, Campile, Ireland.

20 1881. Barrington, Richard Manliffe, LL.D.; Fassaroe, Bray, Co. Wicklow.

1903. Bartels, Max.; Pasir Datar, Halte Tjisaät (Preanger), Java, Dutch East Indies.

1906. Bates, George L., C.M.Z.S.; Kribi, Kamerun, West Africa.

1908. Beaumont, Walter Ibbotson, F.Z.S.; 1 Osborne Place, Plymouth.

1902. Becher, Harry, C.E.; Beechwood Cottage, Burnham-on-Crouch.

25 1897. Benson, John; The Post Office, Vancouver, B.C.

1897. Berry, William, B.A., LL.B.; Tayfield, Newport, Fifeshire.

1907. Bethell, The Hon. Richard; 30 Hill Street, Mayfair, W.

1907. Bickerton, William, F.Z.S.; The Hawthorns, Marlborough Road, Watford, Herts.

1880. Bidwell, Edward; 1 Trig Lane, Upper Thames Street, E.C.

30 1892. Bird, The Rev. Maurice C. H., M.A.; Brunstead Rectory, Stalham, S.O., Norfolk.

1891. Blaauw, Frans Ernst, C.M.Z.S.; Gooilust, 'sGraveland, Hilversum, Noord-Holland.

1903. Blathwayt, The Rev. Francis Linley, M.A.; 1 Stonefield Avenue, Lincoln.

1897. Bonar, The Rev. Horatius Ninian, F.Z.S.; Saltoun, Pencaitland, N.B.

1905. Bone, Henry Peters, F.Z.S.; 28 Adelaide Crescent, Brighton.

35 1894. Bonhote, John Lewis, M.A., F.L.S., F.Z.S.; Gade Spring, Hemel Hempstead, Herts. (*Secretary & Treasurer.*)

1906. Boorman, Staines; Heath Farm, Send, Woking, Surrey.

1898. Booth, George Albert; 6 North Road, Preston; and Fern Hill, Grange-over-Sands, Lancs.

1904. Booth, Harry B.; Ryhill, Ben Rhydding, *viâ* Leeds, Yorks.

1907. Boraston, John Maclair; Ingleside, Stretford, near Manchester.

40 1908. Borrer, Clifford Dalison; 6 Durham Place, Chelsea, S.W.

1895. Bradford, John Rose, M.D., D.Sc., F.R.S., F.Z.S; 8 Manchester Square, W.

Date of Election.

1902. Bridgeman, Lieut. The Hon. Richard O. B., R.N.; Weston Park, Shifnal, Salop; and H.M.S. 'Bramble,' China Station.

1909. Briggs, Thomas Henry, M.A., F.E.S.; Rock House, Lynmouth, R.S.O., N. Devon.

1902. Bristowe, Bertram Arthur; The Cottage, Stoke D'Abernon, Surrey.

45 1885. Brockholes, William Fitzherbert; Claughton-on-Brock, Garstang, Lancashire.

1908. Brook, Edward Jonas; Hoddam Castle, Ecclefechan, N.B.

1890. Brooke, Harry Brinsley; 33 Egerton Gardens, S.W.

1899. Brooke, John Arthur, J.P.; Fenay Hall, Huddersfield; and Fearn Lodge, Ardgay, Ross-shire.

1900. Bruce, William Speirs, LL.D., F.R.S.E.; Scottish Oceanographical Laboratory, Surgeon's Hall, Edinburgh.

50 1907. Buckley, Charles Mars; 4 Hans Crescent, S.W.

1906. Bucknill, The Hon. John Alexander Strachey, M.A., F.Z.S.; Nicosia, Cyprus; and Hylands House, Epsom, Surrey.

1895. Bulgaria, H.M. Ferdinand, Tsar of, F.Z.S.; The Palace, Sofia, Bulgaria.

1908. Bunyard, Percy Frederick, F.Z.S.; 57 Kidderminster Road, Croydon, Surrey.

1907. Butler, Arthur Gardiner, Ph.D., F.L.S., F.Z.S.; 124 Beckenham Road, Beckenham, Kent.

55 1899. Butler, Arthur Lennox, F.Z.S.; Supt. of Game Preservation, Sudan Government, Khartum, Sudan.

1884. Butler, Lieut.-Col. E. A.; Winsford Hall, Stokesby, Great Yarmouth.

1896. Butterfield, W. C. J. Ruskin; Curator of the Corporation Museum, Brassey Institute, Hastings.

1900. Buttress, Bernard A. E.; Craft Hill, Dry Drayton, Cambridge.

1905. Buxton, Anthony; Knighton, Buckhurst Hill, Essex.

60 1884. Buxton, Geoffrey Fowell, F.Z.S.; Dunston Hall, Norwich.

1896. Cade, Francis J.; Mosborough, The Park, Cheltenham.

1889. Cameron, Ewen Somerled, F.Z.S.; Fallon, Montana, U.S.A.

1896. Cameron, Capt. James S.; 2nd Bn. Royal Sussex Regt., Malta; and Low Wood, Bethersden, Ashford, Kent.

Date of Election.

1888. Cameron, John Duncan; Low Wood, Bethersden, Ashford, Kent.

65 1892. Campbell, Charles William, C.M.G., C.M.Z.S., H.B.M. Chinese Consular Service; British Legation, Peking, China.

1909. Campbell, David Callender, J.P.; Templemore Park, Londonderry, Ireland.

1906. Campbell, The Hon. Ian Malcolm; Cawdor Castle, Nairn, N.B.

1909. Carroll, Clement Joseph; Rocklow, Fethard, Co. Tipperary, Ireland.

1908. Carter, Thomas; Wensleydale, Broome Hill (Great Southern Railway), West Australia.

70 1890. Cave, Charles John Philip, M.A., F.Z.S.; Ditcham Park, Petersfield, Hants.

1894. Chance, A. Macomb, M.A.; 9 Hermitage Road, Edgbaston, Birmingham.

1884. Chapman, Abel, F.Z.S.; Houxty, Wark-on-Tyne.

1907. Chapman, Edward Henry; 3 Hare Court, Temple, E.C.

1882. Chase, Robert William; Pool Hall, Wishaw, near Birmingham.

75 1908. Cheesman, Robert E.; Tilsden, Cranbrook.

1897. Cholmley, Alfred John, F.Z.S.; c/o Mr. R. H. Porter, 7 Princes Street, Cavendish Square, W.

1904. Clarke, Capt. Goland van Holt, D.S.O., F.Z.S., 18th Hussars; Brook House, Hayward's Heath, Sussex.

1889. Clarke, Lt.-Col. Stephenson Robert, F.Z.S.; Borde Hill, Cuckfield, Sussex.

1880. Clarke, William Eagle, F.L.S.; Royal Scottish Museum, Edinburgh.

80 1904. Cochrane, Commr. Henry Lake, R.N.; 30 Drayton Gardens, S.W.

1898. Cocks, Alfred Heneage, M.A., F.Z.S.; Poynetts, Skirmett, near Henley-on-Thames.

1895. Coles, Richard Edward; Ashley Arnewood, New Milton, S.O., Hants.

1904. Collier, Charles, F.Z.S.; Clieveden House, 21 Eaton Terrace, S.W.

1909. Congreve, Lieut. William Maitland, R.G.A.; R.A.Mess, Pembroke Dock; and Breinton House, Hereford.

Date of Election.

85 1888. Cordeaux, Major William Wilfrid, (late 21st Lancers), Hopebourne, Harbledown, Canterbury.

1896. Cowie, Lt.-Col. Alexander Hugh, R.E., F.Z.S.; Aldershot; and c/o H. Ward, Esq., Yeatton, Lymington, Hants.

1894. Crewe, Sir Vauncey Harpur, Bt.; Calke Abbey, Derby.

1898. Crossman, Alan F., F.Z.S.; Cumminin Station, near Doodlakine, Western Australia.

1903. Crowley, John Cyril, M.A.; 5 Beech House Road, Croydon.

90 1898. Crowley, Reginald Alwyn; Highfield, Alton, Hants; and 22 High Street, Croydon.

1899. Curtis, Frederick, F.R.C.S.; Lyndens, Redhill, Surrey.

1877. Dalgleish, John J.; Brankston Grange, Bogside Station, Alloa, N.B.

1898. Dalrymple, Capt. John James, Viscount, M.P. (2nd Bn. Scots Guards); Lochinch, Castle Kennedy, Wigtonshire.

1896. Danford, Capt. Bertram W. Y., R.E.; Bermuda.

95 1897. Darnley, Ivo Francis Walton, Earl; Cobham Hall, Gravesend; and Clifton Lodge, Athboy, Co. Meath.

1883. Davidson, James, F.Z.S.; 32 Drumsheugh Gardens, Edinburgh.

1908. Davies, Claude G.; 'D' Squadron, Cape Mounted Riflemen, Bizana, E. Pondoland, South Africa.

1905. Davis, Kenneth James Acton; Julian Hill, Harrow; and King's College, Cambridge.

1909. Delmé-Radcliffe, Capt. Alfred (105th Maratha Light Infantry); Satara, Deccan, India; and c/o Messrs. Cox & Co., 16 Charing Cross, S.W.

100 1902. Dent, Charles Henry; c/o Messrs. Bolitho & Co. Ltd., Penzance, Cornwall.

1891. De Vis, Charles W.; Queensland Museum, Brisbane; and care of Mr. B. Quaritch, 11 Grafton Street, W.

1893. De Winton, William Edward, F.Z.S.; Graftonbury, Hereford; and Orielton, Pembroke.

1896. Dobbie, James Bell, F.R.S.E., F.Z.S.; 9 Mansfield Place, Edinburgh.

1889. Dobie, William Henry, M.R.C.S.; 2 Hunter Street, Chester.

105 1904. Dorrien-Smith, Thomas Algernon, J.P., D.L.; Tresco Abbey, Scilly Isles.

Date of Election.

1904. Drake-Brockman, Dr. Ralph Evelyn, M.R.C.S., L.R.C.P., F.Z.S.; Cheriton, Wellington Road, Bournemouth.

1865. Dresser, Henry Eeles, F.L.S., F.Z.S.; 44 Hornton Court, Kensington, W.

1896. Drewitt, Frederic Dawtrey, M.A., M.D., F.Z.S.; 14 Palace Gardens Terrace, Kensington, W.

1890. Drummond-Hay, Col. James A. G. R.- (Coldstream Guards): Seggieden, by Perth, N.B.

110 1904. Duckworth, George Herbert; 35 Charles Street, Berkeley Square, W.

1878. Durnford, W. Arthur, J.P.; Elsecar, Barnsley.

1896. Duthie, Lt.-Col. W. H. M.; 70 Kensington Park Road, W.

1905. Dutton, The Hon. and Rev. Canon Frederick George; Bibury, Fairford.

1903. Earle, Edward Vavasour; Franks Hall, Farningham, Kent.

115 1895. Elliot, Edmund A. S., M.R.C.S.; Woodville, Kingsbridge, South Devon.

1884. Elliott, Algernon, C.I.E.; 16 Belsize Grove, Hampstead, N.W.

1902. Ellison, The Rev. Allan, M.A.; Ardoyne House, Watton, Hertford.

1904. Elton, Henry Brown, B.A., B.C., M.R.C.S., L.R.C.P.; Rowford Lodge, Cheddon Fitzpaine, Taunton, Somerset.

1866. Elwes, Henry John, F.R.S., F.Z.S.; Colesborne, Cheltenham.

120 1879. Evans, Arthur Humble, M.A., F.Z.S.; 9 Harvey Road, Cambridge. (*Joint Editor.*)

1888. Evans, William, F.R.S.E.; 38 Morningside Park, Edinburgh.

1905. Ewen, Guy L'Estrange (King's Messenger); St. James's Club, Piccadilly, W.

1892. Fairbridge, William George; 141 Long Market Street, Capetown, South Africa.

1909. Fanshawe, Capt. Richard D. (late Scots Guards); Admiralty House, Portsmouth; and Army & Navy Club, Pall Mall, S.W.

125 1894. Farquhar, Rear-Admiral Arthur Murray, C.V.O.; Granville Lodge, Aboyne, N.B.

1898. Farquhar, Capt. Stuart St. J., R.N.; Naval & Military Club, Piccadilly, W.

Date of Election.

1873. Feilden, Col. Henry Wemyss, C.B., C.M.Z.S.; Burwash, Sussex; and Junior United Service Club, S.W.

1901. Finlinson, Horace W., F.Z.S.; 5 Rosamond Road, Bedford.

1892. Finn, Frank, B.A., F.Z.S.; 35 St. George's Road, Regent's Park, N.W.

130 1902. Flower, Capt. Stanley Smyth, F.Z.S.; Kedah House, Zoological Gardens, Giza, Egypt.

1884. Forbes, Henry Ogg, LL.D., F.Z.S.; Free Public Museums, Liverpool.

1903. Foster, Nevin Harkness; Hillsborough, Co. Down, Ireland.

1880. Foster, William; 39 Colville Gardens, Bayswater, W.

1887. Fowler, William Warde, M.A.; Lincoln College, Oxford.

135 1865. Fox, The Rev. Henry Elliott, M.A.; The Croft, Lytton Grove, Putney Hill, S.W.

1881. Freke, Percy Evans; Southpoint, Limes Road, Folkestone.

1895. Frohawk, Frederick William; Ashmount, Rayleigh, Essex.

1909. Frost, William Edward, J.P.; Ardvreck, Crieff, Perthshire.

1881. Gadow, Hans, Ph.D., F.R.S., F.Z.S.; University Museum of Zoology, Cambridge.

140 1886. Gainsborough, Charles William Francis, Earl of; Exton Park, Oakham.

1907. Gandolfi, Alfonso Otho Gandolfi-Hornyold, Duke, Ph.D.; Blackmore Park, Hanley Swan, Worcestershire.

1900. Garnett, Charles; 9 Cleveland Gardens, Hyde Park, W.; and New University Club, St. James's Street, S.W.

1892. Gerrard, John, Government Inspector of Mines; Worsley, near Manchester.

1902. Gibbins, William Bevington, F.Z.S.; Ettington, Stratford-on-Avon.

145 1879. Gibson, Ernest, F.Z.S.; c/o Messrs. Fraser, Stodart & Ballingall, 16 Castle Street, Edinburgh.

1902. Gillett, Frederick, F.Z.S.; 28 Beaufort Gardens, S.W.; and Junior Carlton Club, Pall Mall, S.W.

1902. Gillman, Arthur Riley, F.Z.S.; 5 Fellows Road, Hampstead, N.W.; and 3 Southampton Street, High Holborn, W.C.

1904. Gilroy, Norman; 95 Claremont Road, Forest Gate, E.; and Seaford, Sussex.

1903. Gladstone, Hugh Steuart, M.A., F.Z.S.; Capenoch, Thornhill, Dumfriesshire.

Date of Election.

150 1908. Godman, Capt. Edward Shirley (2nd Dorset Regiment); Muntham, Horsham.

* 1858. Godman, Frederick DuCane, D.C.L., F.R.S., F.Z.S.; 45 Pont Street, S.W. (*President.*) (*Gold Medallist.*)

* 1858. Godman, Percy Sanden, B.A., C.M.Z.S.; Muntham, Horsham. (*Gold Medallist.*)

1906. Goodall, Jeremiah Matthews, F.Z.S.; 52 Oxford Gardens, North Kensington, W.

1901. Goodchild, Herbert; 66 Gloucester Road, Regent's Park, N.W.

155 1900. Goodfellow, Walter, F.Z.S.; Montrose, New Park Road, West Southbourne, Hants.

1905. Goodyer, Leonard Ernest;

1906. Gordon, Seton Paul, F.Z.S.; Auchintoul, Aboyne, N.B.

1899. Gould, Frank Herbert Carruthers, F.Z.S.; Matham Manor House, East Molesey, Surrey.

1895. Grabham, Oxley, M.A.; The Museum, York.

160 1909. Grant, Claud Henry Baxter, F.Z.S.; 30 Wimbledon Park Road, West Hill, S.W.

1909. Grey, The Rt. Hon. Sir Edward, Bt., P.C., M.P., F.Z.S.; Falloden, Christon Bank, R.S.O., Northumberland.

1906. Griffith, Arthur Foster; 59 Montpellier Road, Brighton.

1885. Guillemard, Francis Henry Hill, M.A., M.D., F.Z.S.; Old Mill House, Trumpington, Cambridge.

1876. Günther, Albert C. L. G., M.A., M.D., F.R.S., F.Z.S.; 2 Lichfield Road, Kew Gardens, S.W.

165 1908. Gurney, Gerard Hudson, F.Z.S., F.E.S.; Keswick Hall, Norwich.

1870. Gurney, John Henry, F.Z.S.; Keswick Hall, Norwich; and Athenæum Club, Pall Mall, S.W.

1896. Gurney, Robert; Ingham Old Hall, Stalham, Norfolk.

1890. Gwatkin, Joshua Reynolds Gascoign; The Manor House, Potterne, Devizes.

1891. Haigh, George Henry Caton; Grainsby Hall, Great Grimsby, Lincolnshire.

170 1887. Haines, John Pleydell Wilton; 17 King Street, Gloucester.

1898. Hale, The Rev. James Rashleigh, M.A.; Boxley Vicarage, Maidstone, Kent.

1905. Hamerton, Capt. Albert Edward, D.S.O., R.A.M.C., F.Z.S.; c/o Messrs. Holt & Co., 3 Whitehall Place, S.W.

Date of Election.

1904. Harington, Major Herbert Hastings; 92nd Punjabis, Bhamo, Upper Burma; and c/o Messrs. Thos. Cook & Sons, Ludgate Circus, E.C.

1900. Harper, Edmund William, F.Z.S.; 6 Ashburnham Road, Bedford.

175 1900. Harris, Henry Edward; 2 St. Aubyn's Mansions, Hove, Brighton.

1893. Hartert, Ernst J. O., Ph.D., F.Z.S.; The Zoological Museum, Tring, Herts.

1868. Harting, James Edmund, F.L.S., F.Z.S.; Edgewood, Weybridge, Surrey.

1893. Hartmann, William; Milburn, Esher, Surrey.

1899. Harvey, Capt. Robert Napier, R.E.; Stanhope Lines, Aldershot.

180 1873. Harvie-Brown, John A., F.R.S.E., F.Z.S.; Dunipace House, Larbert, Stirlingshire, N.B.

1900. Hasluck, Percy Pedley Harford; The Wilderness, Southgate, N.

1902. Hatfeild, John Randall; Edlington Hall, Horncastle, Lincolnshire.

1898. Hawker, Richard Macdonnell, F.Z.S.; Bath Club, Dover Street, W.; and c/o Messrs. Dalgety & Co., 96 Bishopsgate Street Within, E.C.

1905. Hawkshaw, John Clarke, M.A., M.I.C.E., F.Z.S., F.G.S.; Hollycombe, Liphook, Hants; and 33 Great George Street, Westminster, S.W.

185 1905. Headley, Frederick Webb, M.A., F.Z.S.; Haileybury College, Herts.

1907. Hedges, George Mitchell; 42 Kensington Park Gardens, W.

1905. Hellmayr, Carl E.; Wittelsbacherstrasse 2 III., Munich, Germany.

1902. Hett, Geoffrey Seccombe, F.Z.S.; 16 Palace Gardens Mansions, The Mall, Kensington, W.

1899. Heywood, Richard, F.Z.S.; Narside, Narborough, Swaffham, Norfolk.

190 1900. Hills, John Waller, M.P.; Queen Anne's Mansions, Westminster, S.W.; and Highhead Castle, Carlisle.

1884. Holdsworth, Charles James, J.P.; Fernhill, Alderley Edge, Cheshire.

1877. Holdsworth, Edmund William Hunt, F.Z.S.; South Town, Dartmouth, Devon.

Date of Election.

1905. Hopkinson, Emilius, M.B., D.S.O., F.Z.S.; 45 Sussex Square, Brighton; and Medical Officer, Gambia, West Africa.

1904. Horsbrugh, Major Boyd Robert, F.Z.S. (Army Service Corps); The Vicarage, Alkham, near Dover.

195 1888. Horsfield, Herbert Knight; Crescent Hill, Filey, Yorks.

1895. Howard, Henry Eliot, F.Z.S.; Clarelands, near Stourport.

1881. Howard, Robert James; Shearbank, Blackburn, Lancashire.

1869. Hume, Allan Octavian, C.B., C.S.I., F.Z.S.; The Chalet, 4 Kingswood Road, Upper Norwood, S.E.

1890. Hunter, Henry Charles Vicars, F.Z.S.; Abermarlais Park, Llangadock, Carmarthenshire.

200 1901. Ingram, Collingwood; The Bungalow, Westgate-on-Sea.

1902. Innes Bey, Dr. Walter Francis; Curator of the Zoological Museum, School of Medicine, Cairo, Egypt.

1888. Jackson, Frederick John, C.B., C.M.G., F.Z.S., F.L.S.; Uganda, British East Africa; and The Red House, Aldeburgh, Suffolk.

1892. James, Henry Ashworth, F.Z.S.; Hurstmonceux Place, Hailsham, Sussex.

1896. Jesse, William, F.Z.S.; Meerut College, Meerut, India.

205 1889. Johnson, Frederick Ponsonby, B.A., J.P., D.L.; Castlesteads, Brampton, Cumberland.

1891. Johnston, Sir Harry Hamilton, G.C.M.G., K.C.B., F.Z.S.; St. John's Priory, Poling, near Arundel, Sussex.

1905. Johnstone, Edwin James, F.Z.S.; Burrswood, Groombridge, Sussex; and Junior Carlton Club, Pall Mall, S.W.

1900. Jones, Major Henry, F.Z.S. (late 62nd Regt.); East Wickham House, Welling, Kent.

1909. Jones, Staff-Surgeon Kenneth Hurlstone, M.B., Ch.B., R.N.; Royal Naval Barracks, Portsmouth.

210 1899. Jourdain, The Rev. Francis Charles Robert, M.A.; Clifton Vicarage, near Ashburne, Derbyshire.

1902. Joy, Norman Humbert, M.R.C.S., L.R.C.P.; Thurlestone, Bradfield, near Reading.

1908. Keep, Ralph S., F.R.H.S.; Oakhill, East Budleigh, Devon.

1880. Kelham, Br.-Genl. Henry Robert, C.B. (late Highland Light Infantry); Well Hall, Hamilton, N.B.

1894. Kelsall, Major Harry Joseph, R.A.; Golden Hill, Freshwater, Isle of Wight.

Date of Election.

215 1897. **Kelsall**, The Rev. John Edward, M.A.; Milton Rectory, New Milton, Hants.

1904. **Kelso**, John Edward Harry, M.D.; San Remo, 12 Festing Road, Southsea, Hants.

1891. **Kerr**, John Graham, F.Z.S., Regius Professor of Zoology, 9 The University, Glasgow.

1895. **Kingsford**, William Edward; Cairo, Egypt.

1902. **Kinnear**, Norman Boyd; Bombay Natural History Society, 6 Apollo Street, Bombay, India.

220 1882. **Knubley**, The Rev. Edward Ponsonby, M.A.; Steeple Ashton Vicarage, Trowbridge, Wilts.

1900. **Koenig**, Dr. Alexander Ferdinand; Coblenzer-Strasse 164, Bonn, Germany.

1906. **Kollibay**, Paul; Ring 12 I, Neisse, Germany.

1892. **Laidlaw**, Thomas Geddes; Bank of Scotland, Perth.

1884. **Langton**, Herbert; 11 Marlborough Place, Brighton.

225 1881. **Lascelles**, The Hon. Gerald William, F.Z.S.; The King's House, Lyndhurst.

1892. **La Touche**, John David Digues, C.M.Z.S.; c/o Custom House, Chinkiang, China (*viâ* Siberia).

1898. **Learoyd**, A. Ernest; Brandsby Hall, Easingwold, Yorks.

1905. **Legge**, The Hon. Gerald; c/o Messrs. Hoare, 37 Fleet Street, E.C.

1905. **Leigh**, Henry Boughton; Brownsover Hall, Rugby.

230 1906. **Leigh**, John Hamilton, F.Z.S.; Matcham's Park, Ringwood, Hants.

1898. **Le Souëf**, Dudley, C.M.Z.S.; Director of the Zoological Gardens, Melbourne, Victoria, Australia.

1868. **Le Strange**, Hamon, F.Z.S.; Hunstanton Hall, King's Lynn, Norfolk.

1903. **Lethbridge**, Ambrose Yarburgh; Guards' Club, Pall Mall, S.W.

1889. **Leyland**, Christopher John, F.Z.S.; Haggerston Castle, Beal, Northumberland.

235 1897. **Lilford**, John, Lord, F.Z.S.; Lilford Hall, Oundle, Northants.

1909. **Lings**, George Herbert; Barciecroft, Burnage, Didsbury, Manchester.

1897. **Lodge**, George Edward, F.Z.S.; The Studios, 5 Thurloe Square, S.W.

Date of Election.

1908. Long, Sydney Herbert, M.D.; 37 St. Giles Street, Norwich.

1905. Lovat, Lt.-Col. Simon Joseph, Lord, C.B., K.C.V.O., D.S.O., F.Z.S.; Beaufort Castle, Beauly, Inverness-shire.

240 1904. Lowe, Dr. Percy R.; c/o Sir Frederic Johnstone, Bt., The Hatch, Windsor.

1889. Loyd, Lt.-Col. Arthur Purvis, F.Z.S. (late 21st Hussars); Hurst Lodge, Sunningdale, Berks.

1902. Lucas, Auberon Thomas, Lord, F.Z.S.; 7 Cleveland Row, St. James's, S.W.

1877. Lumsden, James, F.Z.S.; Arden House, Arden, Dumbartonshire, N.B.

1908. Lyell, Charles Henry, M.P.; 48 Eaton Place, S.W.

245 1904. Lynes, Commander Hubert, R.N.; H.M.S. 'Excellent,' Portsmouth.

1900. McConnell, Frederick Vavasour; 37 Cranley Gardens, South Kensington, S.W.

1905. McGregor, Peter James Colquhoun; British Agency, Sofia, Bulgaria.

1897. McLean, John Chambers; Te Karaka, Gisborne, New Zealand.

1899. Macmillan, George Augustin, F.Z.S.; 27 Queen's Gate Gardens, S.W.

250 1906. Macmillan, William Edward Frank; 27 Queen's Gate Gardens, S.W.

1909. Macnaghten, Norman Donnelly; Ministry of the Interior, Cairo, Egypt.

1894. Macpherson, Arthur Holte, F.Z.S.; 54 Cleveland Square, Hyde Park, W.

1906. Magrath, Major Henry Augustus Frederick; 51st Sikhs Frontier Force, Bannu, N.W.P., India; and c/o Messrs. H. S. King & Co., 9 Pall Mall, S.W.

1907. Mann, Thomas Hugh, F.Z.S.; Trulls Hatch, Rotherfield, Sussex.

255 1908. Maples, Stuart; Lytton House, Stevenage, Herts.

1904. Mapleton, Harvey William, B.A.; Bracknell Cottage, Hartley Wintney, Winchfield, Hants; and Badgworth Rectory, Axbridge, Somerset.

1894. Marshall, Archibald McLean, F.Z.S.; Crogen, Corwen, N. Wales.

Date of Election.

1894. Marshall, James McLean, F.Z.S.; Bleaton Hallet, Blairgowrie, N.B.

1897. Mason, Col. Edward Snow; 20 Minster Yard, Lincoln.

260 1898. Massey, Herbert; Ivy Lea, Burnage, Didsbury, Manchester.

1907. Mathews, Gregory Macalister, F.L.S., F.Z.S.; Langley Mount, Watford, Herts.

1908. Mathews, Richard Owen; Langley Mount, Watford.

1896. Maxwell, The Rt. Hon. Sir Herbert Eustace, Bt., P.C., F.R.S.; Monreith, Whauphill, Wigtownshire, N.B.

1883. Meade-Waldo, Edmund Gustavus Bloomfield, F.Z.S.; Stonewall Park, Edenbridge, Kent.

265 1899. Meinertzhagen, Capt. Richard, F.Z.S.; Brookwood Park, Alresford, Hants.

1886. Millais, John Guille, F.Z.S.; Compton's Brow, Horsham.

1903. Mills, The Rev. Henry Holroyd, F.Z.S.; The Rectory, St. Stephen-in-Brannel, Grampound Road, Cornwall.

1879. Mitchell, Frederick Shaw; Hornshaws, Millstream, Vancouver Island, British Columbia.

1901. Mitchell, P. Chalmers, M.A., D.Sc., LL.D., F.R.S., F.Z.S.; Secretary to the Zoological Society of London, 3 Hanover Square, W.

270 1904. Mitchell-Carruthers, Alexander Douglas; Little Munden Rectory, Ware, Herts.

1908. Momber, A. R.; La Junia, San Remo, Italy; and 28 Elm Park Road, S.W.

1898. Monro, Horace Cecil, C.B.; Queen Anne's Mansions, Queen Anne's Gate, S.W.

1900. Montagu, The Hon. Edwin Samuel, M.P.; 12 Kensington Palace Gardens, W.

1906. Moore, Major Cyril H.; District Pay Office, Gibraltar.

275 1886. Muirhead, George; Speybank, Fochabers, Moray, N.B.

1893. Mullens, Major William Herbert, M.A., LL.M., F.Z.S.; Westfield Place, Battle, Sussex.

1892. Munn, Philip Winchester, F.Z.S.; Laverstoke, Whitchurch, Hants.

1897. Munt, Henry, F.Z.S.; 83 Kensington Gardens Square, W.

1900. Musters, John Patricius Chaworth, D.L., J.P.; Annesley Park, Nottingham.

280 1907. Neave, Sheffield Airey, F.Z.S.; Mill Green Park, Ingatestone, Essex.

Date of Election.

1882. Nelson, Thomas Hudson; Seafield, Redcar, Yorkshire.

1895. Nesham, Robert, F.Z.S., F.E.S.; Utrecht House, Queen's Road, Clapham Park, S.W.

1897. Neumann, Professor Oscar, C.M.Z.S.; 2 Nollendorfplatz, Berlin, Germany.

1872. Newcome, Francis D'Arcy William Clough; Thurston Lodge, Bury St. Edmunds, Suffolk.

285 1904. Newman, Thomas Henry, F.Z.S.; Newlands, Harrowdene Road, Wembley, Middlesex.

1886. Nicholls, Howard Hill John, M.R.C.S.; Bramber Lodge, Downview Road, West Worthing.

1902. Nichols, John Bruce, F.Z.S.; Parliament Mansions, Victoria Street, S.W.

1900. Nichols, Walter Buchanan; Stour Lodge, Bradfield, Manningtree, Essex.

1876. Nicholson, Francis, F.Z.S.; The Knoll, Windermere.

290 1902. Nicoll, Michael John, F.Z.S.; Valhalla House, Zoological Gardens, Giza, Egypt.

1904. Noakes, Wickham; Selsdon Park, Croydon.

1895. Noble, Heatley, F.Z.S.; Temple Combe, Henley-on-Thames.

1892. Ogilvie, Fergus Menteith, M.A., F.Z.S.; The Shrubbery, 72 Woodstock Road, Oxford.

1890. Ogilvie-Grant, William Robert, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

295 1889. Ogle, Bertram Savile; Hill House, Steeple Aston, Oxford.

1907. Oldham, Charles, F.Z.S.; Essex House, Wellington Road, Watford.

1906. Osmaston, Bertram Beresford (Imperial Forest Service); Naini Tal, India.

1883. Parker, Henry, C.E.; Whitbourne Lodge, Manby Road, Great Malvern.

1880. Parkin, Thomas, M.A., F.Z.S.; Fairseat, High Wickham, Hastings.

300 1908. Paton, Edward Richmond, F.Z.S.; Brookdale, Grassendale, near Liverpool.

1891. Patterson, Robert, F.L.S., M.R.I.A.; Glenbank, Holywood, Co. Down.

1904. Pearse, Theed; Ivy Depot, Virginia, U.S.A.; and Mentmore, Ampthill Road, Bedford.

Date of
Election.

1894. Pearson, Charles Edward, F.L.S.; Hillcrest, Lowdham, Notts.

1891. Pearson, Henry J., F.Z.S.; Bramcote, Notts.

305 1902. Pease, Sir Alfred Edward, Bt., F.Z.S.; Pinchinthorpe House, Guisborough, Yorkshire; and Brooks's Club, St. James's Street, S.W.

1898. Penn, Eric Frank; Taverham Hall, Norwich.

1891. Penrose, Francis George, M.D., F.Z.S.; Wick House, Downton, Salisbury, Wilts.

1900. Percival, Arthur Blayney, F.Z.S.; Game-Ranger, Nairobi, British East Africa Protectorate; and Somerset Court, Brent Knoll, Somerset.

1907. Percy, Lord William; 2 Grosvenor Place, S.W.; and Alnwick Castle, Alnwick, Northumberland.

310 1886. Phillips, Ethelbert Lort, F.Z.S.; 79 Cadogan Square, S.W.

1888. Phillips, George Thorne; Wokingham, Berkshire.

1893. Pigott, Sir Thomas Digby, K.C.B.; The Lodge, Lower Sheringham.

1908. Player, W. J. Percy; The Quarr, Clydach, R.S.O., Glamorganshire.

1907. Pocock, Reginald Innes, F.L.S., F.Z.S.; Superintendent of the Zoological Gardens, Regent's Park, N.W.

315 1905. Pollard. Capt. Arthur Erskine St. Vincent (The Border Regiment); Haynford Hall, Norwich.

1896. Popham, Hugh Leyborne, M.A.; Hunstrete House, Pensford, near Bristol.

1898. Price, Athelstan Elder, F.Z.S.; 61 Great Cumberland Place, W.

1903. Proctor, Major Frederick William (late West Riding Regt.); Downfield, Maidenhead.

1901. Proud, John T.; Dellwood, Bishop Auckland.

320 1893. Pycraft, William Plane, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

1888. Radclyffe, Charles Robert Eustace; Hyde, Wareham, Dorset.

1903. Ralfe, Pilcher George; The Parade, Castletown, Isle of Man.

1903. Ratcliff, Frederick Rowlinson; 24 Lancaster Gate, W.

1906. Rattray, Col. Rullion Hare; 68 Dry Hill Park Road, Tonbridge, Kent.

325 1879. Rawson, Herbert Evelyn; Comyn Hill, Ilfracombe.

Date of
Election.

1894. Read, Richard Henry, M.R.C.S., L.R.C.P.; Church Street, Hanley, Staffordshire.

1888. Read, Robert H.; 8*a* South Parade, Bedford Park, W.

1877. Reid, Capt. Philip Savile Grey (late R.E.), F.Z.S.; The Elms, Yalding, Maidstone.

1903. Renaut, William E.; 17 Emanuel Avenue, Friar's Park, Acton, W.

330 1908. Richardson, Norman Frederic, F.Z.S.; Bradley Court, Mitcheldean, Gloucestershire; and Lynndale, Manor Road, Forest Hill, S.E.

1907. Richmond, Herbert William; King's College, Cambridge.

1895. Rickett, Charles Boughey, F.Z.S.; 13 St. Paul's Road, Clifton, Bristol.

1896. Rippon, Lt.-Col. George, F.Z.S.; 89th Punjabis, P.O. Kalaw, Southern Shan States, Upper Burma.

1907. Ritchie, Archibald Thomas Ayres; The Head Master's, Harrow; and Overstrand, near Cromer.

335 1902. Rivière, Bernard Beryl, F.R.C.S.; St. Giles's Plain, Norwich.

1908. Robertson, Sir Henry Beyer, B.A.; Palé, Corwen, N. Wales.

1898. Robinson, Herbert C., C.M.Z.S.; Selangor State Museum, Kuala Lumpur, Federated Malay States.

1896. Rogers, Lt.-Col. John Middleton, D.S.O., F.Z.S. (late 1st Dragoons); Riverhill, Sevenoaks, Kent.

1893. Rothschild, The Hon. Lionel Walter, D.Sc., Ph.D., M.P., F.Z.S.; The Zoological Museum, Tring, Herts.

340 1894. Rothschild, The Hon. Nathaniel Charles, M.A., F.Z.S.; Arundel House, Kensington Palace Gardens, W.

1907. Russell, Conrad George Edward, F.Z.S.; 2 Audley Square, W.

1883. St. Quintin, William Herbert, F.Z.S.; Scampston Hall, Rillington, Yorkshire.

1903. Sandeman, Capt. Robert Preston (late 10th Hussars); Dan-y Park, Crickhowell.

1899. Sapsworth, Arnold Duer, F.Z.S.; National Liberal Club, Whitehall Place, S.W.

345 1902. Sargeaunt, Arthur St. George; 83 Madeley Road, Ealing, W.

1904. Sargent, James; 76 Jermyn Street, S.W.; and 2 Napier Villas, Cambridge Road, Barnes.

Date of
Election.

1902. Saunders, William Henry Radcliffe, C.E.; 79 Warwick Road, S.W.

1909. Savage, The Rev. Ernest Urmson; 129 Upper Canning Street, Liverpool.

1898. Scherren, Henry, F.Z.S.; 9 Cavendish Road, Harringay, N.

350 1907. Schwann, Geoffrey; 4 Prince's Gardens, S.W.

1905. Schwann, Harold, F.Z.S.; 11 Abingdon Gardens, Kensington, W.

* 1858. Sclater, Philip Lutley, D.Sc., F.R.S., F.Z.S.; Odiham Priory, Winchfield, Hants; and Athenæum Club, Pall Mall, S.W. (*Joint Editor.*) (*Gold Medallist.*)

1891. Sclater, William Lutley, M.A., F.Z.S.; Odiham Priory, Winchfield, Hants.

1907. Scott, The Rev. Canon Samuel Gilbert, M.A.; The Rectory, Havant, Hants.

355 1899. Selous, Frederick Courteney, F.Z.S.; Heatherside, Worplesdon, Surrey.

1889. Senhouse, Humphrey Patricius, B.A.; The Fitz, Cockermouth, Cumberland.

1908. Seppings, Capt. John William Hamilton (Army Pay Department); 3 West View, Cork, Ireland.

1899. Serle, The Rev. William, M.A., B.D.; The Manse, Duddingston, Edinburgh.

1900. Service, Robert; Maxwelltown, Dumfries.

360 1901. Seth-Smith, David, F.Z.S.; 34 Elsworthy Road, South Hampstead, N.W.

1904. Seth-Smith, Leslie Moffat, B.A.; Alleyne, Caterham Valley, Surrey.

1909. Seton, Malcolm Cotter Carioton; 13 Clarendon Road, Holland Park, W.; and Union Club, Trafalgar Square, S.W.

1899. Sharman, Frederic, F.Z.S.; 47 Goldington Road, Bedford.

1871. Sharpe, Richard Bowdler, LL.D., F.L.S., F.Z.S.; Assistant Keeper, Zoological Department, British Museum (Natural History), South Kensington, S.W.

365 1870. Shelley, Capt. George Ernest, F.Z.S. (late Grenadier Guards); 39 Egerton Gardens, South Kensington, S.W.

1865. Shepherd, The Rev. Charles William, M.A., F.Z.S.; Trottiscliffe Rectory, Maidstone, Kent.

1908. Smalley, Frederic William; Challan Hall, Silverdale, near Carnforth, Lancs.

Date of
Election.

1906. Snouckaert van Schauburg, Baron René Charles; Neerlangbroek, Holland.

1903. Sparrow, Major Richard, F.Z.S.: 7th Dragoon Guards. Abbasia Barracks, Cairo, Egypt; and Rookwoods, Sible Hedingham, Essex.

370 1906. Stanford, Surgeon Charles Edward Cortis, B.Sc., M.B., R.N.; Royal Marine Barracks, Plymouth.

1893. Stanley, Samuel S.; Fair View House, Harbury, Leamington, Warwickshire.

1900. Stares, John William Chester; Portchester, Hants.

1902. Stenhouse, John Hutton, M.B., R.N.; Royal Hospital School, Greenwich, S.E.

1906. Steward, Edward Simmons, F.R.C.S.; 10 Prince's Square, Harrogate, Yorks.

375 1898. Stirling, William, J.P., D.L.; Ord House, Muir of Ord, N.B.

1893. Stonham, Charles, C.M.G., F.R.C.S., F.Z.S.; 4 Harley Street, Cavendish Square, W.

1881. Studdy, Col. Robert Wright (late Manchester Regiment); Waddeton Court, Brixham, Devon.

1887. Styan, Frederick William, F.Z.S.; Stone Street, near Sevenoaks.

1887. Swinburne, John; Haenertsburg, Transvaal, S. Africa.

380 1882. Swinhoe, Col. Charles, M.A., F.L.S., F.Z.S.; 6 Gunterstone Road, W. Kensington, W.

1884. Tait, William Chaster, C.M.Z.S.; Entre Quintas 155, Oporto, Portugal.

1905. Taylor, Lionel Edward, F.Z.S.; Division of Forestry, Agricultural Department, Pretoria, Transvaal.

1909. Tenison, Lieut. William Percival Cosnahan (62nd Battery, R.F.A.); Nowshera, N.W.F.P., India.

1889. Tennant, Sir Edward Priaulx, Bt., M.A, M.P., F.Z.S.; 34 Queen Anne's Gate, S.W.; and The Glen, Innerleithen, N.B.

385 1886. Terry, Major Horace A. (late Oxfordshire Light Infantry); The Lodge, Upper Halliford, Shepperton.

1904. Thompson, Lieut. William R., R.G.A.; Montrose, Weymouth.

1900. Thorburn, Archibald, F.Z.S.; High Leybourne, Hascombe, near Godalming, Surrey.

1893. Thorpe, Dixon L.; Loshville, Etterby Scaur, Carlisle.

Date of Election.

1903. Ticehurst, Claud Buchanan, M.D.; Huntbourne, St. Michael's, Ashford, Kent.

390 1894. Ticehurst, Norman Frederic, M.A., M.B., F.R.C.S., F.Z.S.; 35 Pevensey Road, St. Leonards-on-Sea.

1902. Townsend, Reginald Gilliat, M.A.; Buckholt, Dean, Salisbury.

1893. Trevor-Battye, Aubyn, F.Z.S.; Firdene, Weybridge, Surrey.

1906. Tuke, Charles Molesworth; The Gate House, Chiswick.

1864. Upcher, Henry Morris, F.Z.S.; Sheringham Hall, Norfolk.

395 1894. Ussher, Richard John, M.R.I.A.; Cappagh House, Cappagh, S.O., Co. Waterford, Ireland.

1907. Van Oort, Dr. Eduard Daniel; Museum of Natural History, Leyden, Holland.

1908. Vaughan, Matthew; Haileybury College, Herts.

1906. Vaughan, Lieut. Robert E., R.N.; H.M. Coast Guard, Tenby, S. Wales.

1890. Venour, Stephen; Fern Bank, Altrincham, Cheshire.

400 1884. Verey, Alfred Sainsbury; Heronsgate, near Rickmansworth.

1881. Verner, Col. William Willoughby Cole (late Rifle Brigade); Hartford Bridge, Winchfield, Hants; and United Service Club, S.W.

1902. Wade, Edward Walter; Vittoria Hotel, Hull.

1886. Wade-Dalton, Col. H. D.; Hauxwell Hall, Finghall, R.S.O., Yorkshire.

1895. Wallis, Henry Marriage; Ashton Lodge, Christchurch Road, Reading.

405 1881. Walsingham, Thomas, Lord, M.A., LL.D., F.R.S., F.Z.S.; Merton Hall, Thetford, Norfolk.

1899. Walton, Major Herbert James, M.B., F.R.C.S., I.M.S., C.M.Z.S.; c/o Messrs. H. S. King & Co., 9 Pall Mall, S.W.

1872. Wardlaw-Ramsay, Lt.-Col. Robert George, F.Z.S.; Whitehill, Rosewell, Midlothian, N.B.

1896. Watkins, Watkin, F.Z.S.; 33 Evelyn Gardens, S.W.; and Wellington Club, S.W.

1903. Watt, Hugh Boyd; 3 Willow Mansions, Fortune Green Road, West Hampstead, N.W.

410 1906. West, Colin, F.Z.S.; The Grange, South Norwood Park, S.E.

1900. Westell, William Percival, F.L.S., F.R.H.S.; Chester House, Letchworth Garden City, Herts.

Date of Election.

1891. Whitaker, Benjamin Ingham; Hesley Hall, Tickhill, Rotherham.

1891. Whitaker, Joseph I. S., F.Z.S.; Malfitano, Palermo, Sicily.

1909. White, Henry Luke; Belltrees, Scone, New South Wales.

415 1903. White, Stephen Joseph, F.Z.S.; Oakwood, Crayford, Kent.

1903. Whitehead, Charles Hugh Tempest; Deighton Grove, York; and 56th Rifles (Frontier Force), Sehore, Bhopal, India.

1887. Whitehead, Jeffery,; Mayes, East Grinstead, Sussex.

1897. Whymper, Charles, F.Z.S.; 7 James Street, Haymarket, S.W.

1898. Wiglesworth, Joseph, M.D., F.R.C.P.; Rainhill, near Liverpool.

420 1894. Wilkinson, Johnson; St. George's Square, Huddersfield, Yorkshire.

1896. Williams, Capt. Lionel Arthur, F.Z.S.; Junior United Service Club, Charles Street, St. James's, S.W.

1897. Wilson, Allan Read, B.A., M.B., B.Ch.; Bloxham, Oxon.

1888. Wilson, Charles Joseph, F.Z.S.; 34 York Terrace, Regent's Park, N.W.

1900. Wilson, Dr. Edward Adrian, F.Z.S.; Westal, Cheltenham.

425 1887. Wilson, Scott Barchard, F.Z.S.; Heatherbank, Weybridge Heath, Surrey.

1897. Witherby, Harry Forbes, F.Z.S.; 11 Hereford Mansions, Hereford Road, Bayswater, W.

1908. Witherington, Gwynne; Aberlash, Sonning, Berks.

1899. Wollaston, Alexander Frederick Richmond, B.A.; 31 Argyll Mansions, King's Road, Chelsea, S.W.

1909. Woosnam, Richard Bowen; Pendell Court Farm, Bletchingley, Surrey.

430 1902. Workman, William Hughes; Lismore, Windsor, Belfast.

1871. Wright, Edward Perceval, M.A., M.D., F.L.S., C.M.Z.S., Professor of Botany in the University of Dublin, Ireland.

1891. Wright, Thomas, M.D.; Castle Place, Nottingham.

1904. Wright, William Crawford; Roslyn, Marlborough Park, N., Belfast.

1895. Yerbury, Lt.-Col. John William (late R.A.), F.Z.S.; 8 Duke Street, St. James's, S.W.; and Army and Navy Club, S.W.

435 1889. Young, Capt. James B., R.N.; Tytherley, Wimborne, Dorset.

1897. Young, John Joseph Baldwin, M.A.; Richmond Park, near Sheffield.

Date of
Election

Extra-Ordinary Members.

1899. GODWIN-AUSTEN, Lt.-Col. HENRY HAVERSHAM, F.R.S., F.Z.S.; Nore, Hascombe, Godalming.

1909. TEGETMEIER, WILLIAM BERNHARD; 19 Westbere Road, W. Hampstead, N.W.

1860. WALLACE, ALFRED RUSSEL, O.M., D.C.L., LL.D., F.R.S., F.Z.S.; Broadstone, Wimborne, Dorset.

Honorary Members.

1907. ALLEN, JOEL ASAPH, Ph.D., F.M.Z.S.; American Museum of Natural History, Central Park, New York, U.S.A.

1886. AYRES, THOMAS; Potchefstroom, Transvaal, South Africa.

1890. BERLEPSCH, Graf HANS VON, C.M.Z.S.; Schloss Berlepsch, Post Gertenbach, Witzenhausen, Germany.

1900. COLLETT, Prof. ROBERT, F.M.Z.S.; University Museum, Christiania.

5 1872. FINSCH, Prof. Dr. OTTO, C.M.Z.S.; Altewiekring 19ᴮ, Brunswick, Germany.

1894. GIGLIOLI, Dr. HENRY HILLYER, F.M.Z.S.; Reale Istituto di Studi Superiori, Florence.

1898. GOELDI, Prof. Dr. EMIL A., C.M.Z.S.; Zieglerstrasse 36, Berne, Switzerland.

1893. REICHENOW, Dr. ANTON, C.M.Z.S.; Museum für Naturkunde, Invalidenstrasse, Berlin.

1903. RIDGWAY, ROBERT, C.M.Z.S.; Smithsonian Institution, Washington, D.C., U.S.A.

10 1890. SALVADORI, Count TOMMASO, M.D., F.M.Z.S.; Royal Zoological Museum, Turin.

Colonial Members.

1904. CAMPBELL, ARCHIBALD JAMES; Custom House, Melbourne, Australia.

1908. FARQUHAR, JOHN HENRY JOSEPH, B.Sc., N.D.A.; Assistant Conservator of Forests, Calabar, Southern Nigeria.

1909. HAAGNER, ALWIN KARL, F.Z.S.; Transvaal Museum, Pretoria, S. Africa.

1908. HALL, ROBERT, F.L.S., C.M.Z.S.; Curator of the Tasmanian Museum, Hobart, Tasmania.

5 1903. LEGGE, Col. W. VINCENT, F.Z.S.; Cullenswood House, St. Mary's, Tasmania.

1905. MACOUN, JOHN, M.A., F.R.S.C.; Naturalist to the Geological Survey of Canada, Ottawa, Canada.

Date of
Election.

1905. Millar, Alfred Duchesne; 298 Smith Street, Durban, Natal.

1903. North, Alfred J., C.M.Z.S.: Australian Museum, Sydney, N.S.W.

1907. Swynnerton, Charles Francis Massy, F.L.S.; Gungunyana, Melsetter, South Rhodesia.

Foreign Members.

1909. Alphéraky, Sergius N.; Imperial Academy of Science, St. Petersburg, Russia.

1900. Bianchi, Dr. Valentine; Imperial Zoological Museum, St. Petersburg.

1904. Blasius, Geh. Hofr. Prof. Dr. Wilhelm, C.M.Z.S.; Gauss-Strasse, 17, Brunswick, Germany.

1880. Bureau, Louis, M.D.; École de Medecine, Nantes, France.

5 1906. Büttikofer, Dr. Johannes, C.M.Z.S.; Director of the Zoological Garden, Rotterdam, Holland.

1906. Buturlin, Sergius A.; Wesenberg, Esthonia, Russia.

1902. Chapman, Frank Michler; American Museum of Natural History, Central Park, New York, U.S.A.

1875. Doria, Marchese Giacomo, F.M.Z.S.; Strada Nuova, 6, Genoa, Italy.

1902. Ihering, Dr. Herman von, C.M.Z.S.; Museu Paulista, São Paulo, Brazil.

10 1886. Madarász, Dr. Julius von; National Museum, Budapest.

1903. Martorelli, Prof. Dr. Giacinto; Museo Civico di Storia Naturale, Milan, Italy.

1894. Menzbier, Prof. Dr. Michael, C.M.Z.S.; Imperial Society of Naturalists, Moscow.

1881. Meyer, Dr. A. B., C.M.Z.S.; Hohenzollernstrasse 17, Berlin, W. 10.

1905. Oberholser, Harry Church; Biological Survey, Department of Agriculture, Washington, D.C., U.S.A.

15 1900. Reiser, Dr. Othmar; Landes Museum, Sarajevo, Bosnia, Austro-Hungary.

1908. Richmond, Charles Wallace; United States National Museum, Washington, D.C., U.S.A.

1894. Schalow, Herman; Traunsteinerstrasse, 2^{I}, Berlin, W. 30.

1900. Stejneger, Leonhard, C.M.Z.S.; Smithsonian Institution, Washington, D.C., U.S.A.

1902. Sushkin, Dr. Peter, C.M.Z.S.; Imperial University, Moscow, Russia.

20 1896. Winge, Herluf, C.M.Z.S.; University Zoological Museum, Copenhagen.

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NINTH SERIES.

No. IX. JANUARY 1909.

I.—*Field-Notes on the Birds of Southern Kamerun, West Africa.* By G. L. Bates, C.M.Z.S., M.B.O.U.

(Plates I. & II. and Text-figures 1–3.)

These notes form a supplement to the series of papers on my birds by Dr. Bowdler Sharpe, who has given to my collections much of their value by his account of them. They would have fitted in well with his papers, but it was impossible to publish them in that way, not only because they were not prepared in time, but also because many of the facts now given were not ascertained till long after I had sent home the specimens of the birds referred to. The information here given has been gathered slowly, during a number of years. Some of the notes have already been published with Dr. Sharpe's papers in 'The Ibis' (1904, pp. 89, 592; 1905, pp. 89, 462; 1907, p. 416; 1908, pp. 117, 317). Hence a complete account can be obtained only by referring to them. To some groups of birds, such as the Accipitres, I have added very little here.

I collected from 1901 till 1904 at and about Efulen, but made three short trips to the Ja River in the latter part of that period. After a journey home, in 1904–1905, I again returned to Africa, and collected at Efulen in the latter year till September, when I made a trip much farther towards the interior than I had gone before, into the Njiem or Zima

Country, where I reached the village of Bezam. On this trip most of my time was spent in travelling, and I got but few birds and nothing new. After returning to the coast at Kribi, I went back to the neighbourhood of the Ja, and settled at the village of Bitye, which has been my headquarters since December 1905. In 1906, and again in 1907, I proceeded to the coast, and on both trips spent some time in collecting between Efulen and Kribi. In April 1908 I went to the coast once more to take the steamer for England. The places where I collected are marked on the map which appeared in 'The Ibis' for October 1908 (p. 558, pl. xi.) by a line drawn under the name.

My specimens were obtained in various ways. The least effective way, so far as the mere procuring of the birds was concerned, was shooting them myself. Still, I have always done this to some extent, for the sake of a better acquaintance with the birds in life. Certain natives have often been entrusted with my guns to shoot specimens. Many of the larger forms have been shot by my hunter, when his principal object was four-footed game for meat. Some birds I have bought (with little trade-articles) from natives, who shot them with their own guns in the days when they could get powder. Now that is no longer possible, for the German Government has shut off the supply. I am the less sorry for this, as it has caused the native hunters to return to their crossbows and little arrows, which do not damage specimens so much as shot. The bows they hold out in front of them when they shoot, at arm's length (see text-fig. 1, p. 3), sighting along the shaft or stock, on which is laid the tiny arrow. These arrows are made of the split dry stalks of the *Raphia*-palm—the same that are used here in building houses. They are only about eight inches long and little larger than a knitting-needle. I never cease wondering at the skill displayed even by boys, who can send one of these little splinters through the body of a bird no bigger than the thumb, often from a considerable distance. The same little arrows, when poisoned, are used to kill monkeys, and even the large apes. For birds they are not poisoned. The bow and little arrows have been especially useful in shooting birds sitting on their nests.

The best way of obtaining certain kinds of birds has proved to be by snares. Native boys are always skilful at this method, for they have been accustomed from infancy to catch little birds to eat. For birds brought to me thus caught I pay with fish-hooks, which I use as a kind of currency, taking them back again in exchange for larger articles at a certain rate. The way in which these snares are set on the

Text-fig. 1.

Natives with their crossbows and arrows.

ground in the forest, and baited with termites strewed around, was described very well in the first letter I wrote to Dr. Sharpe years ago (see 'Ibis,' 1904, p. 92). But I did not then know the birds very well, and by the "Ntyoû" I meant *Bleda notata*. *Criniger chloronotus* is one of the species that are never captured in this way. Birds that are caught in numbers by means of these snares baited with termites are *Bleda syndactyla*, the different species of *Neocossyphus*, *Turdinus*, *Alethe*, and *Callene*, and

Text-fig. 2.

Native setting snares for birds in a Cassava-patch.

sometimes, in the forest, the Ground-Dove (*Calopelia*) or the Forest-Francolin (*Francolinus lathami*). Snares similarly set in the smaller second-growth forest often catch *Cossyphi* and Warblers, such as *Burnesia*, and occasionally other birds. When used in cassava-patches they catch the village Ground-Doves (*Chalcopelia*). Similar snares may be set in small trees, the bent stick being tied to a twig. By doing this in trees full of the fruits which the birds eat, certain species are more easily caught. One of the best trees for this is the "A'bâe," a species of *Alcornia*. Many kinds of birds eat the catkin-shaped fruit of a big weed called "mvomijang," which is really a kind of pepper (*Piper subpeltatum*), and little snares are often fixed on these weeds. Likewise snares set on a pepper-plant of another sort (*Capsicum*) catch many birds. Flowering shrubs, and especially that called "tya'a" (*Leea*, of the order Ampelideæ), attract many Sun-birds, which are caught in numbers by little snares fixed on the bunches of flowers.

The general character of the country in Southern Kamerun could not be better described by me now than has been already done in 'The Ibis' (1904, p. 592). I wish to emphasize again the distinctness, as regards their bird-population, of the primitive forest from the smaller tangled growth of trees, bushes, sedges, grass, and weeds which covers ground that has been cleared and cultivated in former years. Most birds belong strictly to one kind of country or the other, and are seldom or never seen out of the kind to which they belong. The region of the Ja is made up largely of the opener country, from which the primitive forest has been cleared. Hence the birds peculiar to this country are abundant there, and a number of species are found which do not occur in the more densely forested district of Efulen. Such are *Pyromelana*, *Serinus*, *Colius*, and the Kite, to name only a few. It is noticeable that these are birds which have a wide Ethiopian range. Those birds of the great forest nearer the coast that were not found in the Ja region, such as *Phasidus*, *Picathartes*, and *Geocichla*, are mostly forms peculiar to the West-African forest. Not very far to the north of Bitye, I am told, the grass-land of Northern Kamerun commences, and some species probably wander from it into the country where I have collected.

Though this paper consists mainly of field-notes, I have recorded a few specimens collected since those included in Dr. Sharpe's papers. These are mainly either additional examples belonging to the species already reported on, about which I had something in particular to say—for instance, to describe the stomach-contents, the nest and eggs, &c.; or they are specimens of well-known species, mainly migrants from Europe, that had not yet been reported. No list of the specimens belonging to my later collections is attempted here.

Having a number of eggs to describe, I have been fortunate in obtaining the help of Mr. W. R. Ogilvie-Grant, whose brief descriptions of the eggs, enclosed in square brackets, add much to the value of this paper.

The arrangement followed is that of Dr. Reichenow's 'Vögel Afrikas' (cited as V. A.), and the number preceding the title of each species in this List is the number of the species in that work.

The native names are given in square brackets, and follow the title.

112. PTERONETTA HARTLAUBI (Cass.). [Alot, or Aloteke.]
Sharpe, Ibis, 1904, p. 98; 1907, p. 425.
Pteronetta cyanoptera Reich. V. A. i. p. 123.

The Wild Ducks of this country are generally seen in pairs, but sometimes a trio occurs—a pair with a third "tagging after." Once, in August, I saw four of them come and perch on the big limbs of a cotton-tree and perform some queer antics. They perched in pairs; the birds of each pair faced each other on the limb, bowed their heads, and rubbed each other's bills and heads, all the while making a raucous noise. After keeping this up for a few minutes they flew away.

Two young ducklings that must belong to this species, which is the only one in the country, were brought to me at different times by people who said that they had caught them on the banks of streams. Each had four light spots, forming a quadrilateral, on the back.

126. GLAREOLA MELANOPTERA. [Amalaka.]

These birds were seen, two or three together, several times during September, flying about over the village street, and frequently alighting in it. This seemed to be the only spot of bare ground which they could find in this forest-covered country. Migratory Wading Birds of a number of kinds have been seen to do the same—not only the Ringed Plovers already reported, but some of which I failed to get a specimen. In September of a previous year a flock of some long-billed Waders came and stood in the street.

153. CHARADRIUS HIATICOLA. [Amalaka.]

Ægialitis hiaticula Sharpe, Ibis, 1907, p. 422.

No. 2839. ♂ hiem. Bitye, Nov. 1, 1907.

156. CHARADRIUS FORBESI. [Amalaka.]

No. 2835. ♀. Bitye, Oct. 31, 1907.

These two Plovers were also shot while walking in the village-street in the manner described under *Glareola melanoptera.* So were the Ringed Plovers of the year before, *Ægialitis hiaticola* and *Æ. dubia,* already reported ('Ibis,' 1907, pp. 422, 423).

247. SAROTHRURA REICHENOVI. [Otua-bijilik.]

Sharpe, Ibis, 1907, p. 421.

Sarothrura elegans Reichen. V. A. i. p. 287.

♂. Bitye, Dec. 5, 1907.

This specimen was caught in a snare baited with termites. In its muscular gizzard, and also that of another caught at Efulen two years before, was much coarse sand. The latter was brought in at evening, doubtless caught in the hands, and kept alive overnight. While in captivity it made a curious noise, like a low growl.

My note on these queer little Rails ('Ibis,' 1907, p. 421) was put under the head of *S. bonapartei,* because that was the species recorded in Dr. Sharpe's previous paper. Doubtless what was said there applies to both species.

260. **Podica camerunensis.** [Mveleku.]

No. 2489. ♂. Bitye, April 24, 1907. Testes large. Stomach (gizzard) containing bits of prawns.

This is a very different-looking bird from any other that I have obtained and agrees exactly with the description of *P. camerunensis*.

260 *a*. **Podica jacobi** Reich. (?).

No. 2877. ♂. Bitye, Jan. 26, 1908. Testes rather large.

No. 2991. ♀. Bitye, March 23, 1908.

Both these specimens are adult, as indicated by their breeding-organs. They agree with the description of *P. senegalensis*, except in having white throats and smaller measurements: the male, wing 190 mm., tail 135, culmen 40; the female, wing 171 mm., tail 140, culmen 37. They are just like the specimens of *Podica* that I have sent in former years, which have been named *P. camerunensis*, but incorrectly.

I find in the 'Journal für Ornithologie' (1906, p. 325) the following note:—"Dr. Reichenow exhibited a new *Podica* from Kamerun, which he named *Podica jacobi*, and which differs from *P. senegalensis* in the much smaller size, and apparently always retains the white throat, even in age. Length about 370, wing 157, tail 125, bill 35, tarsus 35 mm."

My specimens of *Podica*, of both species, have been shot by natives, who say that they find the bird swimming, but that, when frightened, it flies to the bushes or low branches along the bank, often, on first rising from the water, using both its wings and its feet as it skims along the surface. The stomachs are very muscular, and sometimes contain what appears to be mud and trash from the margins of streams. These birds are very ill-smelling and disagreeable to skin.

313. **Bubulcus ibis.**

Bubulcus lucidus Sharpe, Ibis, 1907, p. 424.

♂. Bitye, May 18, 1907. With long ornamental feathers on the crest, back, and breast.

♂. Bitye, Nov. 11, 1907. Without the ornamental feathers.

This Egret was never met with at Efulen, and was observed only occasionally at the Ja, and then apparently in transit. It was seen only in the months of May and November, flying about the village or alighting in the street, in the manner of the Wading Birds mentioned above. One individual was shot on the roof of a native hut. I think that there must be a migration of these birds, perhaps only a part of them, from the great plains of the Haussa States in Northern Nigeria, where Hartert found them so plentiful, when the drought sets in there in autumn. They must go to some open country to the south, such as the lower Congo or Angola, passing over the forest-country between, and returning north in May. In passing over this country, so thickly covered with trees, these birds of the open plains are attracted by the bare ground in the villages.

337. TURTUR SEMITORQUATUS. [Zum.]

Streptopelia torquata Sharpe, Ibis, 1907, p. 419.

The "Zum" has two different calls, which are interpreted by the natives as a conversation, in a tone of mutual fault-finding, between a man and his wife. The woman says, "The season is here, and no clearing made yet" (for planting); the man says, "And not a pot on cooking." These sentences in Bulu, spoken with the proper intonations, resemble two calls—a longer and a shorter one—made by this Dove. But I do not think that they are those of the male and the female, but both, probably, of the male. When I hear one call, apparently answered by another bird at a little distance, the second has the same call as that of the first, and it is not really an answer, but, rather, an imitation by another male, which takes up the tune as it were, while the female is probably close by and silent. In Mr. J. C. McLean's very interesting notes on the birds of New Zealand ('Ibis,' 1907, p. 535) he tells about the two different songs of the "Tui" bird in different localities. One song he first heard in the bush towards the end of September, and it was "all the rage" on Oct. 14, while in the open country another song was "the fashion." He suggests possible reasons for this, as difference of food. But it struck me that in the words "the fashion" was suggested the true explanation. Birds' songs and calls are often imitated from other birds, generally of the same species.

The "Zum" builds in small trees in old cleared ground. In a nest found in February, in the thick top of a small tree not far from my house at Bitye, was one nestling; it would be truer to say that it was *on* the nest, which was a mere bed of little sticks. This nestling was entirely covered with hair-like down of a pale tawny colour, like the hair of a "yellow" dog. Another nest, found in January, had one egg lying on it, which measured 32 × 24 mm.

[The egg is of a nearly perfect oval shape, somewhat glossy and pure white.—O.-G.]

383. Francolinus squamatus. [Okwal.]

Sharpe, Ibis, 1907, p. 418; Reich. V. A. p. 469.

To my note about the Okwal ('Ibis,' 1907, p. 418) I add here merely an account of some eggs. They were brought to me three times in December and January last. The boy who brought the first lot said that he first found six, lying on dry leaves on the ground, and left them. On going back afterwards to get them, he found only four, which he took. They were all nearly ready to hatch. They varied somewhat in size—from 45–49 mm. long by 33–34 broad. The next lot consisted of four—"all there were." They measured 42-43·5 mm. long by 34-35 broad. The last lot consisted of six, measuring 41·5–43 mm. long by 34–35 broad. About six must be a full clutch, and not two or three, as I thought before. These eggs have extremely thick and hard shells.

[The nine eggs are of a broad oval shape, or sometimes slightly pointed. The shell is slightly pitted all over, almost devoid of gloss, and of a uniform buff colour.—O.-G.]

424. Francolinus lathami. [Obem.]

Sharpe, Ibis, 1907, p. 416.

Here, again, I have only to add to my former note ('Ibis,' 1907, p. 417) an account of some additional clutches of eggs brought to me. These have still been always two in the clutch, so that I think it is safe to say that two is the number usually laid. They vary a good deal in size—from 36–42·5 mm. long by 25–27 mm. broad. Only a few of them could be saved, as they nearly all had to be broken to get out the contents. The shells were very thick and hard.

[Four eggs are of a rather long, pointed, oval shape, indistinctly pitted and slightly glossy. They are uniform rich buff, somewhat paler towards the poles.—O.-G.]

453 *a*. KAUPIFALCO MONOGRAMMICUS. [Viol-Obam.]

Sharpe, Ibis, 1905, p. 465.

♀ ♂ ad. Bitye, Feb. 3 & 6, 1908.

♂ ad. Akok, 35 miles from Kribi, April 12, 1908.

The stomach of the last specimen contained a few bones, apparently of a small rodent, and the tail only, recently swallowed, of a skink. The tail had evidently been all that the Hawk had secured of the lizard. In the stomachs of the others were a variety of things—the foot of a skink, scales of a snake (not of a lizard), and remains of a small rodent.

499. MILVUS ÆGYPTIUS. [Obam.]

Sharpe, Ibis, 1904, p. 103.

Kites are abundant on the Ja, but are seen only during the months from November to April inclusive. They appear and disappear, not suddenly, but gradually, and stray individuals may be seen in October, or even September, before the others come, or in May, after the others have gone away. Their coming and going are not timed in accordance with any change in the seasons here, for their arrival is in the midst of the second rainy season, and their departure is in the midst of the first rainy season. Their movements must be timed according to changes in the seasons in the country from which they come, and their presence in Southern Kamerun seems to coincide with the dry and wintry season in Northern Kamerun and Northern Nigeria.

I have seen no indication that Kites breed at the Ja, and think the statement made in my former note that they do so, which I got from the natives ('Ibis,' 1904, p. 602), was a mistake. They must have seen the nests of some other bird of prey, such as *Polyboroides*.

Besides the refuse picked up around villages, the Kites eat palm-nuts and catch wild mice and young chickens. When I had a couple of monkeys' skulls drying on the roof of my kitchen I had to tie them to a heavy log to prevent them from being carried off by the Kites.

On my homeward voyage, both in the Kamerun River and at Dakar, Kites were seen following in the wake of the steamer and catching up bits of refuse from the water, just like the Gulls.

501. Pernis apivorus.

Sharpe, Ibis, 1905, p. 465.

a. ♂ ad. Bitye, March 7, 1907. Under parts almost white. Stomach containing large insects, including some larvæ that looked like very large maggots, which my hunter found the bird digging out of a rotten log over a stream.

b. ♀. Bitye, Feb. 20, 1908. Abundant dark spots and bands beneath. This bird had some small ova in the ovary. Does it reach its breeding-place early in the spring?

531. Scotopelia bouvieri.

Sharpe, Ibis, 1904, p. 603.

♂. Bitye, Dec. 30, 1907.

The stomach contained many bones of small fishes and some bits of prawns.

552. Syrnium nuchale. [Akung.]

Sharpe, Ibis, 1907, p. 427.

When I skinned my specimen I was struck with the difference in size between the ear-openings on the two sides of the head. On measuring these, I found the lengths of the elliptical slits in the skin that form the entrance to the ear-cavities to be as follows:—right ear 20 mm., left 14·5 mm. In all specimens seen since then the same difference has been found, though not always to so great an extent. In one the ear-openings measured: right 19, left 13 mm.; in another, right 19, left 14·5 mm.; in another, right 17, left 14 mm. All of these happen to have been male birds. In the size of the ear-cavities in the skulls no difference was observed.

556. Glaucidium sjöstedti. [Akung-minkan.]
Sharpe, Ibis, 1907, p. 427.

I obtained a female specimen, which had been taken on its nest in a hollow tree in the forest, where it was sitting on one egg. The hole in the tree in which it had been caught was said to have been only about five feet from the ground. The time of year was August (dry season). The bird had been eating a wild mouse as well as beetles. The egg measured 34 × 28 mm.

[The egg is of a wide perfect oval shape, almost devoid of gloss, and pure white.—O.-G.]

612. Turacus zenkeri. [Mba.]
Sharpe, Ibis, 1907, p. 435.

This is the Touraco of the Ja, while *T. meriani* is that of Efulen and the coast. When I have been walking along the road going to Bitye, I have often carefully observed where I first saw *T. zenkeri*, for the two species can be distinguished at a distance, if seen plainly, by their crests. Along the road I always saw the coast-species, and I think that the domain of *T. zenkeri* must begin about Bitye, but I have never found *T. meriani* there. There seems to be a sharply defined boundary between them.

A nest was found in August (dry season). It was in the thick top of a low tree in a bit of forest near the village, at the edge of a small stream. It was built of tiny dry twigs laid loosely together, so that it fell to pieces when taken in the hand. There were two eggs, both of which measured 37 × 29 mm.

[Two eggs of a perfect oval shape, devoid of gloss, and of a uniform creamy white.—O.-G.]

615. Centropus monachus. [Du'u, or Esil.]
Sharpe, Ibis, 1907, p. 439.

Female, with an egg in the oviduct, Bitye, July 30, 1906.

As has been said ('Ibis,' 1907, p. 439), this species is a characteristic bird of the second-growth trees and bushes and jungle of old cleared land around villages. In such a situation was the nest found that has been already described. Subsequently another was found in a very different sort of place. It was in a small marsh surrounded by the forest, such as the people call "éngas," formed by the spreading out of the water of a little stream over several acres. The nest rested upon the coarse grass of the marsh, which was bent together to form its base, with a good many dry blades broken off and laid on for lining, and some standing stalks also bent and disposed over the nest to form a screen. One egg only had been laid, but another nearly ready to be deposited was found in the oviduct of the bird which was shot. Twice subsequently eggs of this bird have been brought to me which were said to have been found in an "éngas" or marsh. Butler ('Ibis,' 1905, p. 356) states that in the Upper Nile district this species is a bird of the "sudd." In Kamerun it seems also to frequent marshes to some extent, though usually seen on dry ground.

Three eggs appear to form the clutch. Leaving out one clutch of three, which were less surely identified than the others and were somewhat smaller, my eggs measure: length 35–37·5 mm., breadth 26–29·5 mm.

[Nine eggs are of a blunt oval shape, practically devoid of gloss, and pure white.—O.-G.]

Besides the insect food—usually grasshoppers—found in the stomachs of most specimens, and the larger prey already reported, I have found in the stomachs of birds of this species bits of the shell of a small speckled bird's egg, like that of a *Cisticola,* and bits of the shell of a water mollusk.

I have mentioned the native story that this bird adorns its nest with the heads of the snakes that it has killed. Though I have never found these, I have seen a poisonous snake—a half-grown African cobra four feet long—that had been killed by one of these birds. A woman called me to see the dead snake, which was found lying with its head bruised and pierced. She had seen the bird fly up from the place, and on going there had found the snake lying dead.

634. **Cercococcyx mechowi.** [Mon-Obain.]

Sharpe, Ibis, 1907, p. 436.

This smaller Cuckoo with the remarkable tail closely resembles in some of its call-notes the common larger Cuckoo just mentioned. It also says "Za-so-foé" in a similar manner, though in a higher tone of voice. I have heard one of these birds making this call, and uttering at the same time other interpolated notes that seemed to be peculiar to itself. It appears to imitate the call of *Cuculus gabonensis*, which in its turn seems to imitate that of *C. solitarius*.

The food of *Cercococcyx* consists almost exclusively of caterpillars.

637. **Cuculus gabonensis.** [Za-so-foé, or Mon-Obam.]

Sharpe, Ibis, 1907, p. 436.

The note published in a previous paper ('Ibis,' 1907, p. 435) about the call-notes of the common Cuckoo of this country should, I suppose, have been under this name and not "*Cuculus solitarius*." Its characteristic call of "Za-so-foé" seems to fit exactly the descriptions which I have read of the call of the South-African "Piet-mijn-vrow." The other loud excited call described in my former note I have since watched a bird make while it chased another (probably its mate) from branch to branch of a tree.

A hen bird (No. 1901) had an egg in the oviduct just ready to be laid, which got broken before it could be taken out. It was not larger than the egg of *Pycnonotus gabonensis*, if as large.

[Judging from the fragments, I should say the egg appears to have been of a somewhat pointed oval form and almost devoid of gloss. The ground-colour is white, sparingly marked, chiefly at the large end, with small spots and dots of a dull purplish brown and lilac-grey.—O.-G.]

651. **Indicator stictithorax.** [Mali.]

Sharpe, Ibis, 1907, p. 440.

All my four specimens of this bird were obtained on my collecting-trip to the heavily forested region near the coast in September 1906. They were shot in the tree-tops near our camp, one at a time, on different days. They were seen, each time, sitting silently, watching the bees buzzing about the camp, I think, for bees are attracted to a little fresh clearing in the forest. The stomach-contents of the birds were mainly particles of wax, mixed with bits of insects, and had a smell of honey; but sometimes there were only bits of insects. These birds have the toughest skin of any that I know; it is like strong yellow parchment. All of them had much fat underneath it. The tough skin, and perhaps the fat also, must be a protection against bee-stings.

I never heard these birds or any other *Indicator* make a sound. My boys told me that the "Mali," as they call all the species of this genus, makes a little cheeping cry of "Wôé! wôé" ("wôé" means "honey"). They say that sometimes, on going to where the bird is, they find honey. But the natives here know nothing about following it through the forest; indeed, this would be a difficult thing, even for a native, to do.

653. Indicator conirostris. [Mali.]

Sharpe, Ibis, 1907, p. 440.

A very young bird (No. 2416), obtained later than those which have been reported on in Dr. Sharpe's paper, is interesting because of the place in which it was found. It was taken in the hole of an Ovôl (*Heliobucco bonapartii*). In other holes in the same dead tree were birds of that species; but the little *Indicator* was found in its hole alone, so that it formed, apparently, the entire family of its foster-parents. In its stomach was found, besides insects, the fruit of the "asen" tree, *i. e.* the usual food of the Barbet, but not of the Honey-Guide.

This bird is too young to shew certainly to what species it belongs, except that it is already too large to be *Indicator exilis*. The only other species obtained thus far at the Ja is *I. conirostris*, and the young bird looks like that species.

I have noticed in examples of different species of *Indicator* that the rim of the nostrils forms a raised ring, which is not seen in a specimen after the skin becomes dry.

(See my note in 'The Ibis,' 1904, p. 89.)

657. Melignomon zenkeri.

No. 2181. ♂. Bitye, Jan. 19, 1907. Stomach containing a mass of fine flakes of wax, mixed with tiny black particles.

695. Gymnobucco bonapartii. [Ovôl.]

Reich. V. A. ii. p. 139.

Heliobucco bonapartei Sharpe, Ibis, 1907, p. 441.

Several nestlings have been brought to me at different times, caught in their holes in decayed trees. These young birds always have the bill dull yellow at the base, and blackish at the tip—quite different from the uniform horn-colour of the adult. Besides that the feathers of the forehead, that become stiff and yellowish in adults, are soft and dark in the younger birds.

Nine individuals, taken by my boys from one colony, were shown to me on the 1st of April—five adults and four young of different ages. The boys had stopped up the holes the evening before, when the birds were inside and not alert enough to fly away, and had chopped the dead tree down in the morning. It was in one of the holes of this colony that the young *Indicator* was caught (see above, p. 16). Besides the birds, they brought a single egg that was found in one of the holes. It measured 22 × 18 mm.

[An egg of this species is of a perfect oval shape, devoid of gloss and pure white.—O.-G.]

694. Gymnobucco peli. [Ovôl.]

Sharpe, Ibis, 1907, p. 441; Reich. V. A. ii. p. 138.

I wish to give briefly my reasons for believing that there are really two species, *G. peli* with nasal tufts, and *G. calvus* without them, and that the one is not merely the young or immature form of the other.

Though I found the two forms in the same locality at Efulen, as Dr. Sharpe has noted ('Ibis,' 1904, p. 616), I have found only the one with tufts at the Ja, and there I have found it of all ages.

Young birds of this species, like those of *Heliobucco,* have the bill yellowish at the base and blackish at the tip; and the culmen less ridged than old birds, which have a sharp ridge reminding one of the incipient ridge in a small Hornbill. Now, supposing that these signs of youth, seen in the bill, hold good in *G. calvus* as well, there are five birds in the large series of the British Museum, of the form without tufts, that are young. As an additional proof that they are young, they all have a few small scattered feathers on the top of the head.

Here we have birds both old and young *with* tufts, and birds both old and young *without* tufts.

710. Barbatula leucolæma. [Omvek.]

Sharpe, Ibis, 1907, p. 442; Reich. V. A. ii. p. 147.

These little Barbets have several times been caught in holes in dead stumps or limbs. No. 1883 was caught thus in a hole in a small stump, only a few feet from the ground. The stump was half decayed and full of termites. The cavity excavated by the bird was 100 mm. in greatest depth and 55 mm. in greatest diameter, the largest part not being the bottom but a little over halfway down. The diameter of the round entrance-hole was 20 mm., just big enough to admit the fore-finger. In the bottom was a little bed of fine chips, on which lay two glossy white eggs, which were very thin-shelled and fragile and got broken. But one was measured before it got broken, and was 15 × 11·5 mm. in size.

Other females of this species were brought by boys, who said that they caught them in their holes; but no other eggs came to hand; the eggs generally got broken before they reached me. In one case the boy reported finding three eggs.

715. Barbatula subsulphurea. [Omvek.]

Sharpe, Ibis, 1907, p. 441.

A specimen (1985) was caught in its hole, which was in a small dead limb 50 mm. in diameter. The hollow made by the bird ran downward about 70 or 80 mm., and was almost as large as the limb, leaving only a thin shell of wood around it. There was nothing in the hole but the bird, which, on dissection, proved to be a female, not yet very near the laying time. It must have been providing its breeding-hole long beforehand—unless these holes are made to live in, and not for breeding only. That these little birds do their own excavating there can be no doubt. While the bird I have just mentioned was kept a prisoner alive in its hole for a few hours, it did some vigorous hewing, trying to cut its way out. The wood was half-decayed.

In the stomachs of birds of this species and the last have several times been found, besides fruit, what looked like small moth-cocoons.

738. VERREAUXIA AFRICANA. [Obô'ô-Minkomkome.]
Sharpe, Ibis, 1907, p 444.

In my note in 'The Ibis' (1905, p. 93) I spoke of seeing one of these tiny Woodpeckers peck the grub out of the heart of the stem of a small common endogenous plant. That this plant is the usual source of their food is proved by the Bulu appellation, for the long word forming the second half of the bird's name is that of the plant mentioned, while "Obô'ô" means "hewer." But I have also seen one of these birds pecking at the bark of a tree, making a tapping noise almost as loud as that made by an ordinary Woodpecker.

One day a boy brought me a treasure in the shape of a section of the end of a small stump, about three inches in diameter, green up to about half a foot from the top; and in this dry end, which was still hard and little decayed, a hole had been bored, in which were two tiny white eggs. He brought also the bird caught in the hole, a *Verreauxia*, which I skinned and numbered 2866; it was a male, and yet the abdomen shewed that it had been sitting. The cavity excavated in the dry end of the stump had a diameter of about 40 mm. and a depth of about 50 mm., and the entrance-hole, round as if bored by an auger, would just admit a 12-bore gun cartridge (about 20 mm. in diameter). Size of the eggs 14 × 12 mm. and 13·5 × 11·5 mm.

[Two eggs are of a blunt rounded oval shape, slightly glossy and pure white.—O.-G.]

DENDROMUS EFULENSIS. [Ngômôkô.]

Dendromus efulensis Chubb, Bull. B. O. C. xxi. p. 92 (May 1908).

The food of these birds consists almost exclusively of the many small black ants that crawl on trees. One was found to have used the ants in another and very peculiar way. These ants make large nests that look like great excrescences on the trunks of small trees, partly attached along the side and partly hanging, sometimes two feet or more in length. They are papery like a hornets' nest, though heavier and

Text-fig. 3.

Nest of *Dendromus efulensis.*

not so tough; they are of material that will burn. When one is touched myriads of ants swarm out. One day my boy saw a Woodpecker enter a hole in one of these ants' nests. He covered up the hole, and thrust a palm-stalk dart through the ants' nest, transfixing the bird; and then brought ants' nest, bird and all to me. The bird was a male of this species, and forms my specimen No. 2871. The ants' nest was almost deserted by ants, yet two or three were seen crawling over it. The bird and its mate must have first eaten the ants (which would make a number of meals, I should think), and then made a hollow in the deserted home and used it for their own breeding-hole. The cavity was large and would be easy to excavate. There were two eggs, which both measured 22 × 18 mm.

[Two eggs are of a rather short and perfectly oval shape, slightly glossy and pure white.—O.-G.]

767. DENDROPICUS LAFRESNAYI. [Ngômòkô.]
Dendropicus camerunensis Sharpe, Ibis, 1907, p. 443.
Dendropicus lafresnayi Sharpe, Ibis, 1904, p. 620.

776. DENDROPICUS GABONENSIS. [Ngômòkô]
Sharpe, Ibis, 1904, p. 619; 1907, p. 443.

These are both birds of the open country and second-growth forest, and are never found in the primitive forest. *D. lafresnayi* was the commoner species at the Ja, *D. gabonensis* at Efulen. These Woodpeckers differ from *Dendromus* in their food; for they were never found to have eaten ants. Small white grubs were the usual contents of their stomachs.

The lively cry of *Dendropicus lafresnayi* was one of the commonest bird-sounds in the bushes and small trees surrounding Bitye. At Efulen, too, I heard a bird that looked like *Dendropicus* (probably *D. gabonensis*) utter a shrill piercing cry.

778. COLIUS NIGRICOLLIS NIGRISCAPALIS. [Nsesal.]
Colius nigriscapalis Sharpe, Ibis, 1907, p. 434.

As I have already said something ('Ibis,' 1907, p. 434) of the general habits of the Colies, I will speak only of their nests and eggs here. Of no bird around Bitye is it so easy to find the nests (excepting, of course, those of the common Weavers) as of the Nsesal. These nests are usually set in the forks of thick bushes on waste ground or in the borders of gardens. They are merely thick flat pads of fibrous material of various kinds, piled up with little skill, but slightly hollowed out in the middle. A common material is the grey beard-like *Usnea* from the limbs of old trees. In the nest, among the eggs or the nestlings, are laid trashy fragments of various kinds, generally bits of leaves, which are sometimes still fresh and green; but also pieces of bark, and once I found a grain of corn. A nest that has long been in use has more of this trash than a new one.

The number of eggs laid is generally two, never more than three. They vary in size from 20–23 mm. long by 16–17·5 mm. broad.

[The ten eggs examined are of a wide oval shape and more or less pointed towards the smaller end. They are pure white with a rather rough chalky surface entirely devoid of gloss.—O.-G.]

804. CERATOGYMNA ATRATA. [Ongung.]

No. 2545. ♂. Akok (between Efulen and Kribi). June 20, 1907. Stomach full of fruits of the Rattan Palm.

No. 2606. ♂. Akok, July 9, 1907. Crop and stomach containing forest fruits.

No. 2618. ♂. Akok, July 11, 1907. Testes very large.

No. 2635. ♂. Akok, July 16, 1907. Testes large.

No. 2659. ♀. Akok, July 24, 1907. Small ova in the ovary. Moulting.

These big black Hornbills are birds of the forest, and hence more often seen and heard in the dense forest near the coast than in the Ja district. Their clamorous calls (or squawks) and the rushing of their wings are familiar forest-sounds, as are the similar noises of the Miam (*Bycanistes albotibialis*), which have been already described ('Ibis,' 1905, p. 90). Big and ugly though the birds are, they are very amorous, and the harsh clamour that they make seems to be the mating-call of the male. I have known a male "Ongung" to be making such a clamour as to drown the sound of people crashing through the underbrush beneath him, till he was shot.

No. 2618 was shot by my boys while in the act of plastering up the hole in a tree where its mate probably was. There was clay on its bill and on its helmet, about the tip and sides. The boys said that they heard the cries of the female inside the hole. I went next day to see the place and tried to get a man to climb the tree, but nothing would induce him to try it. The tree was large and tall, and stood apart from others, and was really unclimbable. The hole was so high up, and so hidden by a limb and by parasitic ferns, that it was invisible. Little bits of clay were strewn on the ground at the foot of the tree. While I was there a pair of these Hornbills, a male and a female, came flying round the place. Was one the female that was being enclosed the day before, which had got another mate? This male perched on the limb where the hole was, which was nearly upright, in the position of a Woodpecker, supported by its tail.

A favourite food of this and other Hornbills is the fruit of the *Calamus* palm.

813. Lophoceros fasciatus. [Okwôkwaé.]
Reich. V. A. ii. p. 248.

This is the commonest of the smaller Hornbills. Individuals of this species are often seen in small parties, in the trees left standing in the clearings and in the second-growth forest, where their querulous, disagreeable cries are often heard. Their whole appearance and manner are unpleasant. Their flight is slouching and uncertain, and they seem scarcely able to manage their long wings and tails properly. A favourite food with them is caterpillars, especially the large kinds, which the natives also eat, and the birds gather around trees that are infested by them.

843. Halcyon badius. [Akwaé.]
Sharpe, Ibis, 1907, p. 429.

While the more typical small Kingfishers of this country live and breed along the streams, those of the genus *Halcyon* do not in any way shew a preference for the neighbourhood of water. A man once caught for me a bird of the commonest species, *H. badius*, in a hole in a tree, where it was sitting on the two eggs. The young inside the eggs were already cheeping and of course the eggs had to be broken, but I managed to leave one of them nearly whole so that it could be measured; its size was 26 × 24 mm.

[One egg (in which incubation was evidently far advanced) is of a perfectly circular shape, somewhat glossy and pure white.—O.-G.]

867 *a*. MELITTOPHAGUS GULARIS AUSTRALIS.

Sharpe, Ibis, 1907, p. 431.

No. 2904. ♀. Breeding-organs and skin of abdomen indicating a sitting bird. Caught in its hole in a bank, in which were found also two eggs. One was broken, the other measured 24 × 20 mm.

[The one egg is of a short oval form, somewhat glossy and pure white.—O.-G.]

868. MELITTOPHAGUS MUELLERI.

Merops batesiana Sharpe, Ibis, 1907, p. 432.

In habits this species resembles *Melittophagus australis*, for both of them are generally seen in pairs, never in flocks, and I have strong reason to believe that the present species, like *M. australis*, breeds in holes in banks, a single pair in a place. Thus they differ in habits from those species of the genus *Merops* which are gregarious.

The young birds are mostly black, the brighter colours of the adults appearing but slightly. The females differ from the males only in the blue of the hind-neck being less extensive.

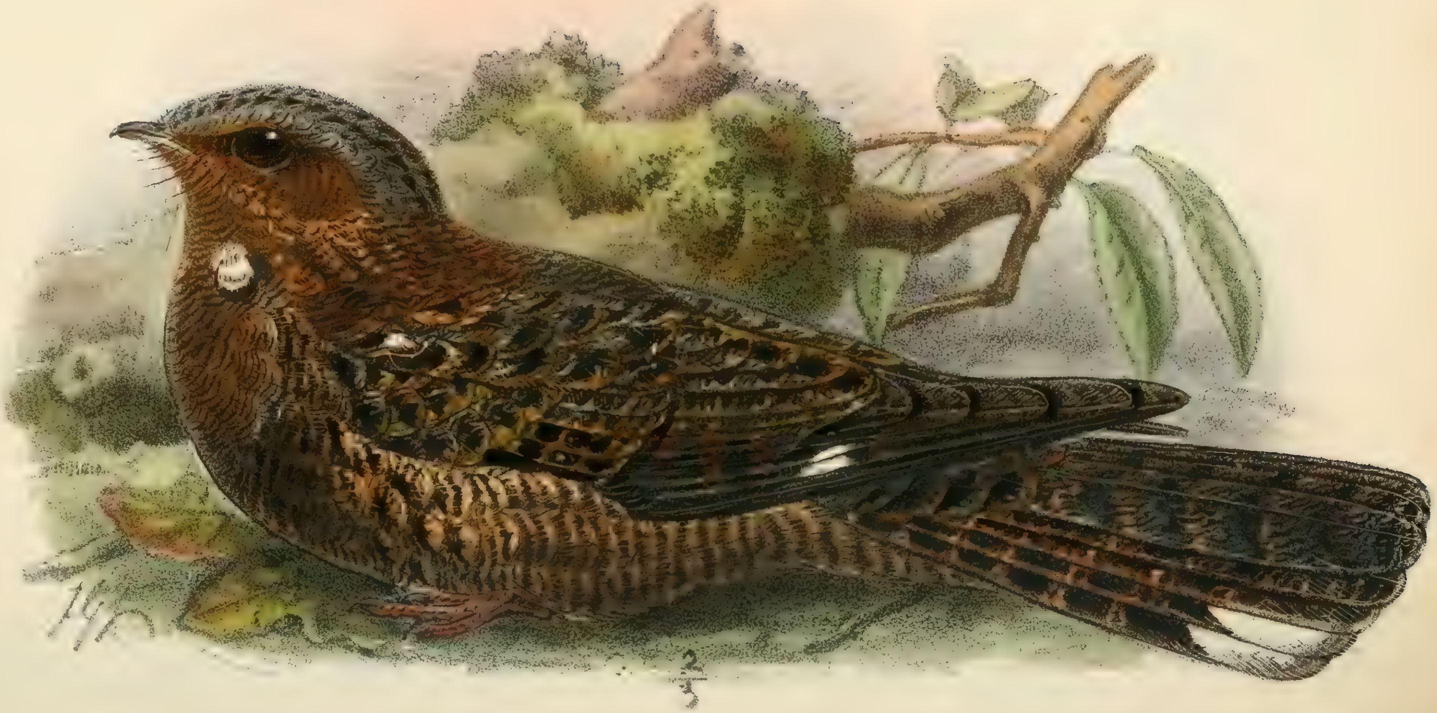
872. MEROPS ALBICOLLIS. [Nso'olong.]

Sharpe, Ibis, 1904, p. 611.

Aerops albicollis Reich. V. A. ii. p. 317.

This bird is surely a *Merops* in its way of life. When I wrote my first note about it ('Ibis,' 1905, p. 91) I knew it mostly near the coast, where it is not so abundant as it is on the Ja. But even at the latter place, as also nearer the

Ibis. 1909. Pl. I.



West, Newman imp.

CAPRIMULGUS BATESI.

coast, it appears only in the winter months of the north and does not breed. These birds, from their beauty and the grace of their movements, always arrest attention, and the occupation I was engaged in would have to be very absorbing indeed that I would not stop to watch a flock of these Bee-eaters. Their first appearance in November is an event of the season.

They not only fly together during the day, but roost in flocks, in certain trees, at night. Just before their departure in the spring, especially, they gather in very large flocks, which may be seen going to their roosting-trees at evening, repeatedly flying away with a loud twittering, and circling back to the trees again.

I saw the last of them about the first of April last year, and the year before about the same time. I think that they must breed on the banks of the rivers to the north. By November, as I understand, the dry season has set in there, and the means of life (that is, the supply of insects) may be lessened by the drought. In April it rains again there, and they go back. They are not influenced in these movements by the changes of the season in this country (Southern Kamerun), but rather by the changes in their other home. I have already spoken of the like appearance and disappearance of the Kites, and of the passage of the Egrets (*Bubulcus*) twice a year. These are migrations within the Ethiopian region.

CAPRIMULGUS BATESI. (Plate I.) [Mvômvôt.]

Caprimulgus batesi Sharpe, Ibis, 1907, p. 432.

No. 2937. ♀ ad. Bitye, R. Ja, March 7, 1908. Sex-organs and skin of abdomen as of a sitting bird.

Though I have once or twice observed this Goatsucker hawking for insects at dusk, it is usually seen in the daytime, when scared up from the ground, where it may have been sitting on its one egg, in the edge of a garden or plantation. Sometimes the natives have sharp enough eyes to see it before it flies up, and have secured my specimens for me. Several eggs were brought to me, but always without the bird, till a man shot the bird numbered 2937 and secured its egg. That all the Nightjar's eggs I have obtained at Bitye belong to this species I feel sure, as no other species has been found there except as a temporary visitor. I am sure that this is the case with the *Cosmetornis* that I got, and the European Nightjar certainly could not have laid these eggs.

Never more than one egg is found in a place. The egg that was accompanied by the bird measured 33 × 24 mm. The others varied in length from 31·5 to 34·5 mm., and in breadth from 24 to 25 mm.

[Five eggs are of a perfectly oval form and somewhat glossy. The ground-colour is white or very delicate pubescent-white. In four specimens the markings, which consist of brown and pale lavender-grey blotches, are distributed over the entire shell; in a fifth specimen almost all the brown markings are concentrated into a cap at one end, while over the remaining part of the shell there are a few small blotches of pale lavender-grey and a few very small spots of brown.—O.-G.]

902 *a.* Caprimulgus sharpii Alexander. [Mvômvôt.]

Sharpe, Ibis, 1907, p. 433.

Caprimulgus trimaculatus sharpei Reich. V. A. ii. p. 358.

My single specimen of this Nightjar was shot in the neighbourhood of a great bare rock several acres in extent, such as are found here and there in the forest. It was the same spot—a place I pass on the road to Bitye—where I shot the only specimen of *Œdicnemus senegalensis* that I have ever seen ('The Ibis,' 1907, p. 423). That the rocky locality was significant for the Nightjar first occurred to me when I read in Boyd Alexander's book ('From the Niger to the Nile,' ii. p. 22) that he found the same or a closely allied species right across from the Gold Coast Hinterland to the Ubangai region, always in rocky places.

916. Cosmetornis vexillarius.

Sharpe, Ibis, 1907, p. 432.

My three specimens of this Nightjar were shot within a few days of one another, and were males without their long plumes. I was surprised when I saw Dr. Sharpe's paper to find what they were. The natives about Bitye certainly know nothing of the remarkable plumage of the breeding males. My specimens were shot in March, just at the end of the dry season and only in 1906; the bird has not been seen again. I think some of them must have been in that neighbourhood on a temporary sojourn, perhaps driven by the dry weather from the region further north or north-east. According to a trader, who had been in Bertua, far to the north-east of Bitye, where there is little forest, this bird lives and breeds there.

934. Chætura sabinii.

No. 2511. ♂. Bitye, May 15, 1907. Testes large. Iris brown; feet bluish.

This specimen was caught alive by a man who said that it and another one flew into his house! Some white-rumped Swifts have been several times seen coursing in the air, and were doubtless of the same species.

966. Hirundo gordoni. [Ngomeko.]

Sharpe, Ibis, 1907, p. 444.

A note on this Swallow has already been published ('Ibis,' 1905, p. 467). Birds of this species are seen oftener than anywhere else about deserted village sites, especially those along the road to the coast. Here there is not enough stir of human life to scare them away, and yet there is the open space and the bare ground that they like. On a trip to Ebolwoa in December 1906, I saw two of these Swallows fly close over the bare ground of such a place, and perch on a plantain along the path. Then one of them was heard to *sing*, uttering a trill in a low, but very sweet voice, its throat swelling much at each utterance. This it repeated and continued to do so as long as I stood and watched. Its mate was perched not more than three feet away.

971. Hirundo nigrita.

Specimens of this Swallow were shot on the water of the River Ja, or the small River Libi, where it joins the Ja.

where I went camping for a few days. (The village of Bitye is ten or fifteen miles from the Ja.) Swallows of this species were often seen during the four days passed in this camp, perched on snags or projecting dead branches over the water, or skimming over the surface of the river. They were never seen away from the water for a moment, and could only be obtained by fishing them out of the river after they were shot.

977. Psalidoprocne nitens. [Nguleyebe, or Nguleyem.]
Sharpe, Ibis, 1907, p. 444.

No. 2642. ♀. Akok (between Efulen and Kribi), July 18, 1907.

No. 2872. ♀. Bitye, R. Ja, Jan. 20, 1908.

The last is the first specimen of this species obtained at the Ja, where the common species of *Psalidoprocne* is *P. petiti.* I had supposed that *P. petiti* was the only species at the Ja, and *P. nitens* the only one near the coast. But my getting this specimen, and likewise seeing *P. petiti,* which is easily distinguished from the other by its forked tail, along the road more than halfway from Bitye to the coast, shews that the territories of the two species overlap.

Both the specimens recorded above were sitting birds, dug out of their holes in banks of streams. (See note in 'The Ibis,' 1907, p. 445.) In the hole dug out at Bitye were two eggs (which got broken) lying on a nest or a bed of the *Usnea* or "beard of trees." In the hole at Akok, which was near the top of a bank of loose clay, some four or five feet above the stream, and extended into the bank a foot and a half, enlarged as it penetrated in, was an ample nest of moss and *Usnea,* with two eggs. These both measured the same—19 × 13 mm.

[One egg of a rather long, pointed oval form, slightly glossy and uniform white.—O.-G.]

In my former note I spoke of two of these birds visiting my house at Efulen, looking for a nesting-place. I have lately seen a much more remarkable though similar action. While sitting in the house of a missionary at Ebolwoa, halfway from the Ja to the coast, on my way to England last April, a pair of *Psalidoprocne nitens* (known by their square tails) entered and perched on a paper ornament hanging from the ceiling. Mr. Hope, who lives in the house, said that they had done this often during several days, and had brought mud and tried to stick it to the ceiling, which is covered with cloth, but the mud would not stick. This is all the more remarkable, since the usual breeding-place of the species is in holes dug in banks, and not in mud nests of their own building.

1000. FRASERIA OCREATA.

Sharpe, Ibis, 1908, p. 328.

No. 2613. ♂ ad. Akok, between Efulen and Kribi, July 10, 1907.

In my brief note on this bird (*l. c.*) I said "I have been told it has a song." I had been correctly informed. When on my collecting-trip to Akok, between Efulen and the coast, in July, one day about noon a bird-song of rare sweetness and variety was heard in the tree-tops over the camp. It was a surprising performance, and both I and my boys were soon looking to see the bird from which it came. We found it at length and followed it from tree to tree, as it went, continually singing in an excited manner. The song was made up of a great variety of notes, some imitating the call-notes of other birds (such as *Dicrurus atripennis* and *Bias musicus*). Mingled in its song were also the buzzing call-notes that I already knew well as those of *Fraseria ocreata.* Soon another bird of the same kind, singing in the same way, was heard near by. It was shot, and its skin is No. 2613. But I had already seen the first one plainly enough to be sure that it belonged to this species.

This song struck me as resembling that of *Lanius mackinnoni.* It is characteristic of a Shrike to sing only occasionally, and then with surprising sweetness. Reichenow puts this genus among the Flycatchers.

1016 *a*. ALSEONAX EPULATUS FANTISIENSIS. [Kula, or Okulebe.]

Alseonax fantesiensis Sharpe, Ibis, 1907, p. 445.

No. 2330. ♂. Bitye, R. Ja, March 11, 1907. Testes large. Feet dark; mandible dark-tipped.

This specimen is recorded here because it was brought to me along with its nest, in which were two very young birds. These the boy said were being fed when he shot the parent with his bow and arrow. The nest was peculiar in that it was large and bulky for so small a bird, though the inside was a small cup lined with fine fibres, very much like the nests of *Tchitrea* and other common Flycatchers. But the outside part was a mass of dried moss, leaves, tiny sticks, and lichens, loosely piled, but held together by cobwebs running through it. The nestlings were naked except for some tufts of long brown down.

Dr. Sharpe is certainly right in saying that this form is distinct from *Alseonax epulatus*, with its yellow feet and mandible, though they are both found at the Ja, as well as about Efulen.

1021 *a*. FŒDILORHYNCHUS STUHLMANNI CAMERUNENSIS. [Kula.]

Sharpe, Ibis, 1907, p. 447.

In my note in 'The Ibis' (*l. c.*) I spoke of the eggs of this bird found in old Weavers' nests. I have to record two eggs again found in the old nest of *Heterhyphantes nigricollis*, which had been supplied with a new lining of dry grass-blades or shreds of palm-leaf. These eggs measured the same as the former, 20·5 × 13 mm. I am glad to be able to give Mr. Grant's description, as my statement of the colour of the eggs in the former note may have been wide of the mark.

[Four eggs are of a long, slightly pointed oval form and moderately glossy; three examples are uniform light olive-brown, but the fourth is densely and indistinctly marked all over, especially at the broader end, with yellowish-brown.—O.-G.]

The two young birds Nos. 1555 and 1555 *a*, which are entered under *Alseonax epulatus* in 'The Ibis' (1907, p. 445), had been taken in an old Weaver's nest, and must have been the young of the present species. *Alseonax* does not build in such places. If they had belonged to *Alseonax* they would surely have shown rufous spots.

SMITHORNIS CAMERUNENSIS. [Nôm-Kup-Mefan, or Mbamezok.]

Sharpe, Ibis, 1907, p. 451.

This note is additional to the former ('Ibis,' 1907, p. 451). I wish I could say now whether the peculiar rattling noise made by these birds is produced "mechanically," by which I mean in some other way than by the voice, or not. But I know no more than I did, except that I have many times watched these birds making it, as one can do by patiently and carefully creeping up into the thicket where the noise is heard; and I have always observed that the sound begins and ends with the little circuit-flight from the twig, and is never heard when the bird is not flying, and that on the short circuit-flight the wings seem to be moved much more rapidly than is necessary for the distance of a few feet.

The nest has been described, though it should not have been called "little," and the long streamers from it were not mentioned. Others have since been found, and in two of them the sitting birds were caught—both females and each with two eggs under her. The two of these eggs which were whole, one from each nest, measured 23 × 15·5 mm. and 24·5 × 16 mm.

[Three eggs are of a rather long and pointed oval form, distinctly glossy and pure white.—O.-G.]

SMITHORNIS ZENKERI Reich. [Mbamezok.]

Sharpe, Ibis, 1907, p. 452; Reich. V. A. ii. p. 724.

No. 2942. ♀. Bitye, R. Ja, March 9, 1908. Abdomen and breeding-organs indicating a sitting bird.

This specimen is here recorded because it was shot just after leaving its nest, and the nest and eggs were brought to me. This nest, which was found on a bush in the forest, just such a situation as that of the one already mentioned in 'The Ibis' (1905, p. 95), was similar to it. It was merely a large bunch of fresh moss hung from a twig, with a nest built inside of it, composed of dry leaves and stems and the black fibres so often seen in forest-nests. The two eggs measured 23·5 × 17 mm. and 25 × 17·5 mm.

[Two eggs are similar to those of *S. camerunensis.*—O.-G.]

1071. ELMINIA LONGICAUDA.

Sharpe, Ibis, 1907, p. 456.

I have to add to my note on this bird—'Ibis' (*l. c.*), in which its nest was described—the discovery of another nest, similar to the former. It was found also in June, and contained two eggs, measuring 16 × 12·5 mm.

[Two eggs of this species are of a slightly pointed oval shape and devoid of gloss. The ground-colour is white, thickly mottled and clouded in a wide zone round the larger end with lilac-grey and greenish grey.—O.-G.]

1083. TCHITREA VIRIDIS (Müll.). [Abelebele.]

Sharpe, Ibis, 1907, p. 454.

I have to add to my note in 'The Ibis' (*l. c.*) that other nests with eggs have been found, on which the bird has been either caught or shot. These nests are all neat little cups, which differ from those of the two forest-species of *Tchitrea* in having no moss in their bases. The eggs were in every case two in number. They measure: length 18–19 mm., breadth 14 mm.

[Five eggs are of a rather short, somewhat pointed oval shape and devoid of gloss; the ground-colour is creamy-white spotted with light red and lilac-red, the markings being chiefly confined to a ring round the larger end, though a greater or less number of separate spots are scattered over the rest of the shell. In one specimen the markings round the zone are very indistinct and are wanting on the rest of the shell.—O.-G.]

1084. Tchitrea rufocinerea. [Abelebele.]

Sharpe, Ibis, 1907, p. 456.

In this case also I have merely to add to my former note the discovery of another nest with eggs, which this time I saved, though broken. They were taken in the nest, on which a male with large breeding-organs was shot. Three birds of this species have now been shot sitting on their nests, and two of them were males.

[Two broken fragments of eggs of this species closely resemble the eggs of *T. viridis*, but the markings are altogether smaller, those round the larger end taking more the form of spots of dark chocolate-brown and lilac-grey.—O.-G.]

1118. Sigmodus rufiventris.

Sharpe, Ibis, 1908, p. 328.

The birds of this genus have a strange appearance, which is heightened by the yellow iris; and have also strange ways. They go about in bands of half a dozen, flitting, one at a time, from one tree-top to another; they have peculiar cries, and make a loud snapping noise, which sounds as if made with the bill. They shew little fear and are easy to shoot. They are not common, and as they always attract attention when seen and are remembered as peculiar, I believe I can count up the times that I have seen them. Sometimes they have been met with in the big forest, sometimes in the second-growth trees, but never very near a village.

1126 *c*. Pomatorhynchus australis frater. [Nko'o-Bikôtôk.]

Sharpe, Ibis, 1908, p. 335.

This is one of the commonest birds in the "bikôtôk" or old overgrown clearings, and even in the cassava-fields; it is never found in the forest. Like all the common Shrikes of this country it is a bird of a conjugal disposition and is often seen in pairs. When mating it (probably the male only) utters a sort of song, which may be said to begin with a trill or rattle, and end with "keow! keow! keow!," all in a rich pleasant tone of voice. I have heard it also, while flying from bush to bush, make a sharp whip-snapping sound, apparently with its wings, like that made by the little Flycatchers *Diaphorophyia* and *Platystira*. This noise is made only occasionally, and seems to be, like the song, an expression of amorous feelings, or made to attract attention.

This Shrike shares with *Laniarius luehderi* the same native name, and both are common birds of the "bikôtôk," though their calls and actions are different (see 'The Ibis,' 1908, p. 330). But the *Laniarius* hides its nest in some place where it cannot be found, while I have come across several of the *Pomatorhynchus*. One, on which the bird was caught, sitting on two eggs, was the only one where I got the bird and at the same time saved the eggs. The nest, like other nests I have seen of this bird, was a very shallow cup of dry leaf-petioles, grass and other stems, the finer ones inside. It was rather slight and thin. One I found myself was set on the forks of a cassava-stem. In my notebook I have described the markings on these eggs (the two I saved) as being like a lot of *punctuation marks* of print—commas, hyphens, brackets, &c.—jumbled together. The size of these eggs was 24 × 17 mm.

[The two eggs are of a regular or slightly pointed oval form and very slightly glossy. The ground-colour is pure white, rather sparingly marked, especially round the larger end, with small blotches and irregularly shaped spots and lines of brown and various shades of grey.—O.-G.]

1134. **Nicator chloris.** [Ekong, or Ntyong.]
Sharpe, Ibis, 1908, p. 334.

This bird lives in the borders of the forest, or among the higher trees of the second-growth, and generally keeps itself well hidden, for when it comes to the light its spotted wings make it conspicuous. The only sound ordinarily heard is a scolding noise, which is imitated in the explosive nasal sounds of the Bulu names. But on one occasion I watched it sing a song, in a loud clear tone, consisting of quite a variety of notes, some so much run together as to remind me of the peculiar trill of the *Pomatorhynchus*. The song was uttered languidly, a few notes at a time.

No. 1999 was a sitting female, shot with bow and arrow on its nest. This fabric was a "poor excuse" for a nest—a mere pad of dry tendrils and weed-stalks mixed together, so small that the bird would completely cover and hide it. There was a little depression on the top, where the one egg had been laid. The egg reached me broken, along with a tiny nestling just emerged from the shell.

[A broken egg, apparently of a rather blunt oval shape and very slightly glossy. The ground-colour is pale yellowish-clay colour, rather densely spotted all over, especially round the larger end, where the under-markings form an irregular clouded zone, with small spots and dots of dull reddish-brown and dark grey.—O.-G.]

1136. Nicator vireo. [Ekong, or Ntyong.]

Sharpe, Ibis, 1908, p. 335.

This smaller green Shrike, which I found only at the Ja, is not so shy as its larger relative, and its loud and pleasing song is very frequently heard. This song is one of the most striking sounds of the bird-world in that district. It may be likened to a bugle-call of half-a-dozen notes, mostly in one tone, but with one or two towards the end in a higher pitch, the last one or two dropping again to the pitch of the first. It may be heard at almost any time of the day. When singing the bird perches amongst the foliage of some tree, usually high and out of sight.

Dryoscopus bocagii.

Sharpe, Ibis, 1908, p. 331.

Chlorophoneus bocagei Reich. V. A. ii. p. 557.

It certainly seems fitting, from what I know of this bird in life, to have it placed in the same genus as *D. senegalensis* and *D. tricolor*. I became acquainted with the two latter (which I supposed were one, never suspecting that I had met with two species of these birds) at Efulen, and there learned to know their various calls, which I have since heard them (or one of them) make at Bitye, in the Ja region (see 'The Ibis,' 1908, p. 333). At Bitye I shot several of *D. bocagei* at different times. I found them skulking in the foliage of trees, in exactly the same manner as the species I had collected at Efulen, and uttering the same calls.

1203. LANIUS MACKINNONI. [Asanze, or Asese.]

Fiscus mackinnoni Sharpe, Ibis, 1908, p. 328.

I have a little to add to my note in 'The Ibis' about this bird. Once in a cassava-patch, on a thorn-like twig of some dead bush, I found a partly eaten body of a young bird impaled. That I lay this crime at the door of the Asanze is only because I know that its relatives in other lands are "butcher-birds." But against the evil which I only suspect, I hasten to tell the good that I know of this bird. For, though usually silent and morose, when the right mood comes it is a sweet singer. Its notes are slow and scattering, but varied and sweet, and it introduces clever imitations of other birds. I have thus noted hearing the querulous cry of the Coly and the call of *Pycnonotus gabonensis* mimicked perfectly by this Shrike. Once, while an Asanze was watched singing, its mate was seen to come and perch close beside it, while the singer continued his song.

1235. DICRURUS ATRIPENNIS. [Ebondi, or Fa-Beti.]

Sharpe, Ibis, 1908, p. 354.

This is the common forest-Drongo in all localities. In my account of the *éjak*, or company of little birds wandering and feeding together in the forest ('The Ibis,' 1905, p. 462), I named this as nearly always the most conspicuous bird of the *éjak*. On reading, in Mr. Swynnerton's first paper on the Birds of Gazaland, of "the habit of this species [*Dicrurus afer*] of assuming the leadership of the flocks of small birds so often met with" ('The Ibis,' 1907, p. 72), it struck me that my "*éjak*" was something similar to what was mentioned there. It never occurred to me that the *Dicrurus* here in Kamerun was the leader of the *éjak* in any other sense than being the noisiest bird in it, the continual calling of which served to keep the company together, just as the gruff barking of a "father" monkey keeps a troop of monkeys together among the tree-tops.

1237. Dicrurus sharpii Oust. [Fa-Beti.]

Sharpe, Ibis, 1908, p. 355.

This smaller Drongo I never found about Efulen. In my former note I said that "perhaps it does not venture out into the depths of the forest, where *D. atripennis* is at home." A longer acquaintance inclines me to modify this only by striking out the word "perhaps."

A specimen shot just after leaving its nest proved to be a sitting female. The nest was a neatly woven little cup, composed of fine rootlets and stems with some lichens stuck in, and attached or slung, hammock-fashion, to two twigs, hanging between them, with the rim on a level with the twigs. It was held together and to the twigs by gossamer threads. The nest was small for the size of the bird, measuring 55 mm. in width inside. There was one egg in it and no trace of another. It measured 24 × 15·5 mm.

[One egg of a long, pointed oval form and almost devoid of gloss. The ground-colour is of a pinkish cream-colour, with a very faintly marked zone of indistinct lilac spots round the larger end.—O.-G.]

Lamprocolius splendidus glaucovirens. [Kwang.]

Sharpe, Ibis, 1908, p. 357.

The Kwang (the name pronounced in a high explosive tone to imitate the ringing call of the bird) is found in all places where I have collected. It visits trees which bear the fruits that it eats, especially the "aseng" (*Musanga smithii*), wherever they are found, but is more frequently seen in the opener country than in the forest. It perches high, and in this and in its brilliant dress and ringing cries exhibits a sort of proud, or martial, bearing. Besides its usual stirring call, it sometimes utters a loud but sweet piping note, like that of the American Red-winged Blackbird. When it flies it makes a rushing sound with the wings; and it does not do so only occasionally and voluntarily, but always. The Kwang are inclined to gather together in flocks to feed, and sometimes collect in large companies to go to roost. But I have seen such flocks seldom. I once had a notion that these birds go away at certain seasons, but find this to be a mistake.

No. 2693, a sitting female of this species, was caught by a boy in its hole one evening in August. The hole was described as a large knot-hole in a living tree, only a few feet from the ground, but in a marsh (" éngas "—see under *Centropus monachus* above, p. 13). The boy brought a rough, flat nest, composed entirely of leaf-petioles, which he said he took from the bottom of the hollow, and two eggs; these measured 31·5 × 24·5 mm. and 31 × 24 mm.

[Two eggs are of a regular oval shape and almost devoid of gloss, the whole shell being somewhat rough to touch and slightly pitted. The ground-colour is pale greenish-blue, sparingly marked all over with spots and blotches of pale reddish-brown and lilac-grey.—O.-G.]

1264. LAMPROCOLIUS PURPUREICEPS Verr. [Kwang-Metôndô.]

Sharpe, Ibis, 1908, p. 356.

This species is called in Bulu from the name of the small tree on the fruit of which it is fond of feeding. It is a rather retiring and quiet bird, never seen in numbers except in the wild fruit-trees where it feeds, and seldom using its voice, though I have heard it make what seemed a feeble imitation of the clanging call of its larger and more conspicuous relative.

One day in June, near Efulen, I saw two of these birds repeatedly enter a high knot-hole, coming every time from the limb of a large tree, where there may have been lichens or moss; they were evidently building. I shot one (I am almost ashamed to say) and it proved to be a breeding male (No. 819). Two days after two more birds were seen to enter the same hole, and one was seen to have a little stick in its bill. Had the female whom my shot left a widow got another mate so soon?

1287. PŒOPTERA LUGUBRIS. [Mboyôm.]

Sharpe, Ibis, 1908, p. 356.

These birds are most frequently seen in flocks of about two dozen. They have not often been heard to use their voices, but I have detected faint little cries, like feeble imitations of the ringing "kwang" of the chief of their family. Their quick flight in perfect unison, with their long tails all pointing the same way, reminded me of a lot of little fishes darting in a clear stream.

The boy who shot my last two specimens, a breeding male and a breeding female, said that there were a number of them about a dead tree-trunk that had holes in it, like the holes of the Ovôl (*Gymnobucco*).

They eat the same fruits as the other Starlings. The colour of the iris is bright yellow.

1312. MALIMBUS NITENS. [Nga'a-minkan.]

Sharpe, Ibis, 1908, p. 352.

In the great forest, which reaches its fullest development in the hilly country around Efulen, the path of the hunter often leads him over the pebbly bed of a stream, where he wades through the clear water and dodges the overhanging branches and vines. Attached to these overhanging branches, not much higher than his head over the water of the brook, he often sees Weavers' nests, in size and structure much like those of the common village *Hyphantornis*, but woven of different materials—long rootlets or runners, such as would be found in the forest. These are the nests of *Malimbus nitens*. They are nearly always empty, for the builders never seem to use them but once, and are always seeking some new and more retired spot. There is never more than one nest in a place. The only egg I ever found has already been described ('Ibis,' 1908, p. 352).

1313. MALIMBUS CASSINI. [Nga'a-minkan.]

Sharpe, Ibis, 1908, p. 352.

No. 1049. ♀ ad. In 'The Ibis' (*l. c.*) this specimen has been put under *Melanopteryx nigerrimus*. Though the plumage is perfectly black, the bird differs from the adult male of *Melanopteryx nigerrimus* in the following particulars:—Bill slenderer and at the same time shorter (culmen 15·5 mm.), in *Melanopteryx nigerrimus* the culmen is never less than

18 mm.; culmen ridged and narrow, while that of *M. nigerrimus* is rounded and broad; smooth at base, while in every one of the score of specimens of *M. nigerrimus* examined the culmen is crossed near the base by wave-like wrinkles. Feet smaller and darker in colour than in *M. nigerrimus*. Besides, this is a female bird, and only the male of *M. nigerrimus* is black. And this bird was certainly the mate of No. 1048, a male *Malimbus cassini*, reported in 'The Ibis' (*l. s. c.*).

Nos. 1048 and 1049 were both shot by myself at their nest in the forest, high up in a *Calamus* or vine-palm. To quote from my notebook:—"The nest was in plain sight, but not conspicuous, because of its resemblance to the dry fronds of the palm. The long entrance pointed diagonally downwards, and its walls were so thin as to be transparent, so that the birds could be seen through it entering and leaving. The two birds were coming and going, as if feeding their young. The perfectly black specimen (No. 1049) was shot first, and the other when it returned, ten or fifteen minutes later. We could not get the nest." I well remember the gallant efforts the two little boys with me made to climb the surrounding trees and so to reach the nest, for a vine-palm, with its stem thickly set with long prickles, is unclimbable. After giving that up we all tried to haul down the vine, but it was too firmly anchored to the surrounding tree-tops by the strong barbs on the tips of its fronds. The birds' castle was impregnable, as it certainly would have been, also, to predatory beasts and snakes. So far as I remember, the tubular entrance to this nest was two or three feet long. The nest seemed to be woven of narrow shreds torn from the leaves of the palm. Though the weaving was open, with many interstices, it seemed to be neat.

No. 1538, ♀ (culmen 15·5 mm.), is exactly like No. 1049.

No. 2515, ♀ (culmen 16·5 mm.), is exactly like No. 1049. My boy brought in along with this No. 2514, another male *Malimbus cassini* reported in 'The Ibis' (*l. c.*), and said that he had shot the two together.

This seems to be the first discovery of the female of *Malimbus cassini*, and also the first *Malimbus* that is entirely black in both sexes. In other species of the genus the females have more black than the males.

Malimbus coronatus. [Nga'a-minkan.]
Sharpe, Ibis, 1908, p. 352, pl. vii.

No. 1865. ♀. This specimen is another perfectly black female, which was previously entered under *Melanopteryx nigerrimus* ('The Ibis,' 1908, p. 350). It is exactly like No. 1049, and if I am right in considering it the female of the present species, *M. cassini* and *M. coronatus* have the females just alike. The evidence for naming it as I have done is less conclusive than in the case of No. 1049. I believe No. 1865 to have been the mate of No. 1864, the type of Dr. Sharpe's *Malimbus coronatus*; but I did not shoot the pair myself. The boy who brought them to me said that he shot the two at their nest, and he brought the nest along to shew me. I do not believe that he was either deceiving me or mistaken.

The nest which the boy brought was quite different from that of *M. cassini* described above, being large, but with the entrance only six inches long, and was woven mostly of tendrils, with the ends bristling out, giving it a rough appearance.

1315. Malimbus malimbicus. [Nga'a-minkan.]
Sharpe, Ibis, 1908, p. 351.

This red-crested species is perhaps the commonest member of this interesting genus of Ploceidæ, in which the bright red colours blossoming out at some part of their ebony plumage remind one of the surprisingly bright flowers sometimes seen on the black forest tree-trunks; both flowers and birds are characteristic of the great forest.

No. 1625 was shot (by myself) near its nest, from which it had just come out. The nest was hung from the long thorny rhachis of a *Calamus*, or climbing palm, about 20 feet from the ground. It was in plain sight, but protected by its position on the long, swaying, thorny leaf-stalk. This nest was more roughly built than that of *Malimbus cassini*, and the downward-pointing opening was short and ragged. The material seemed to be strips of the leaves of the palm on which it was hung.

The Bulu name of all species of *Malimbus* means "Weaver of the vine-palms," from the favourite nesting-place of many of them.

1329. PLOCEUS BICOLOR.

Reich. V. A. iii. p. 34.

Sycobrotus bicolor Sharpe, Ibis, 1908, p. 349.

A common inhabitant of the smaller sort of second-growth forest that springs up on land once cleared and then left for a few years—a sort of forest found very extensively in the Ja district. The bird was never seen at Efulen, where the primeval forest prevails. It seeks its insect-food in the tree-tops or the under bushes and brush, in the dry season making a great rattling among the dry leaves of the underbrush when foraging. Sometimes I have thought, from the beating and rattling noise I heard, that some antelope or pig must be walking about in a thicket, but have found nothing but one of these yellow birds. This species has a little song of a high pitch, ending in a long drawn out "chee-e-e!" which sounds rather sweet. This it is continually singing. A male not breeding has been shot while uttering the little song; and two female specimens, if my boys, who shot them, may be believed, were also singing when shot.

Many of my specimens have been shot at their nests. The pair (Nos. 1562 and 1563) were killed at one shot, one being inside the nest and the other perched at the entrance. The nest is of the ordinary Weaver shape, *i. e.* a globe with a downward-pointing entrance or vestibule on one side, the latter short, not a long tube as in nests of some kinds of *Malimbus*. It is woven of small weed-stems and tendrils, and is rather bulky and rough. Nests of this bird are most frequently found in a kind of small thorny tree called "bôngô." Probably the thorns or prickles, which thickly cover the twigs or leaf-petioles to which the nests are attached, afford protection against marauders.

The eggs, when found in the nests, were two in number, and two that I saved measured 20·5 × 14·5 mm. and 20 × 14 mm.

[Two eggs are of a rather pointed oval shape and pure white.—O.-G.]

1335. Ploceus dorso-maculatus.

Phormoplectes dorsomaculatus Sharpe, Ibis, 1908, p. 349.

The specimens of this bird were all obtained recently around Bitye, killed by my boys. They seem to have been found in such places as the last species (*Ploceus bicolor*), and to eat the same sort of food, mostly insects. No. 2438 was killed along with its young, No. 2439, in a curious manner. The boy caught the young one first and tied a string to its foot, and held it thus tethered while he hid himself and waited. The old bird (the father, not the mother) came "with a fruit in its mouth" to give the young one, when the boy killed it with a stick. The "fruit" was probably a spider, a leg of which I found in the bird's mouth.

1346. Ploceus nigricollis. [Ngas.]

Heteryphantes nigricollis Sharpe, Ibis, 1908, p. 348.

This is one of the commonest birds in clearings and in small second-growth bushes in every place where I have collected. But though common it is rather silent ond retiring. In my note which was published in 'The Ibis' (1908, p. 349), but was written two or three years ago, in saying that it "makes a great rustling of leaves," I had confused *Ploceus bicolor* with this bird. Then I had likewise not learned to distinguish the nests of the two species, and the words "with a very short entrance and somewhat roughly made" apply better to nests of *Sycobrotus bicolor*. The nests of the "Ngas" are somewhat smaller, have the entrance or vestibule a little longer, and are a little better woven and of finer materials—fine weed or grass-stems, although in general the nests of the two species look alike. "Ngas's" nests are found very often—generally old and deserted ones—hanging on bushes, not on trees. Other smaller birds, or at least the little Flycatcher *Pœdilorhynchus camerunensis*, use these second-hand nests to breed in, so that eggs found in a Ngas's nest are not always eggs of the Ngas.

But I have found undoubted eggs of the Ngas; never more than two in a nest. Measurements of seven such eggs vary but little, 20–22 mm. in length by 14–15 mm. in breadth.

[Nine eggs are of a long, rather pointed oval shape, and possess a certain amount of gloss. They present three types of coloration, viz.: pure white; pale bluish-green, finely and rather sparingly freckled all over with lilac-grey and umber-brown; and pale pinkish-white, thickly freckled all over with light red and pale lavender-grey.—O.-G.]

1359. Ploceus cucullatus. [Nga'a (pl. Benga'a).]

Hyphantornis cucullatus Sharpe, Ibis, 1908, p. 348.

These Weavers follow man in all his migrations in this country as inevitably as do rats and sparrows. No sooner is a clearing made and stakes set in the ground for a new village than "Benga'a" begin to build in the nearest tree. A plantain or a palm-tree is chosen by preference, as furnishing not only a site but material close to hand for the nests; but any kind of tree will do. The more populous the village and the greater the hubbub of village life, the better are the birds pleased, adding to the noise their own shrill chatter. This strange predilection for public and noisy places, so contrary to the instinct of most birds, is not hard to account for, since these birds thus incidentally obtain man's protection against birds and beasts of prey. No place is so safe from hawks and snakes as the village street. Though boys kill a good many Benga'a, especially at planting-time, when they pull up the young shoots of corn as soon as they appear above ground, in order to get the sprouting grain beneath, yet the number killed by man does not seem to affect the population of the colonies. Killing numbers of them will not frighten them away, and tearing down their nests only makes them build the more furiously. They have a perfect mania for building, and when not building new nests are all the time repairing the old ones. They often destroy palm-trees by stripping them bare of their leaves.

One day I watched a boy pull down the Benga'a's nests from a palm-tree by means of a long "bamboo" (really it was a palm-stalk) with a loop on the end. I made the following note :—"Not an hour after the nests were torn down the birds were busy building again. A few old shells of nests the boy had left untouched, and the birds set to work to repair these. Both males and females were busy at it, though the latter worked so quietly that they were scarcely noticed at first. They seemed to find some difficulty in tearing off the tough leaves of the palm where the nests were, so, giving these up, they went to neighbouring plantations, where the leaves were much tenderer. One was seen to bring a ribbon of plantain-leaf nearly an inch wide, and enter an old nest with it. After the bird had been inside a few seconds, a loop of the ribbon was seen to emerge from the side of the nest. . . . The very beginning of a new nest was seen also. It consisted of a wreath of strips woven together between two separated palm-leaflets, with the rhachis of the frond for one side." Thus the birds began with the part of the nest that was attached to the palm-frond, and from this circle they would weave the body or sack of the nest on one side and the vestibule on the other." This is doubtless the way in which the nests of all the larger Weavers are constructed.

It is the males of the Nga'a that utter the incessant shrill chattering song, doing so usually while supporting themselves, partly by holding on with their feet and partly by fluttering the wings, at the entrance to the nest.

Two eggs are found in a nest. They vary much in colour and markings, but, so far as I have yet seen, both eggs of the same nest are alike. Three eggs that I have saved, from three separate nests, shewing variations in markings and colour, agree remarkably in size, each measuring 25 × 16 mm.

[Three eggs are of elongate oval form and are very slightly glossed. They are of three types, viz.: pure white; bluish-green, sparingly marked all over with spots of umber-brown and blotches of lilac-grey, some of which are very pale; and lastly white, marked rather sparingly all over with small spots of dull maroon and pale grey.—O.-G.]

1350. MELANOPTERYX NIGERRIMUS. [Eyelesô, or Evindi Nga'a.]

Sharpe, Ibis, 1908, p. 350.

Ploceus nigerrimus Reich. V. A. iii. p. 50.

The note already published ('Ibis,' 1908, p. 350) gives in a few words nearly all that I can say of the habits of these birds. The Bulu often call them by the same name as *Hyphantornis cucullatus*, or "Nga'a," and for distinction "Evindi" (*i. e.* "black") "Nga'a." The reason for applying to two birds of such different appearance the same name is evident when one knows their habits. The two species not only build nests exactly alike and in the same situations, but often mingle their nests together in the same colony. Moreover, the females and the young males of the two are much alike, and the two species live on the same farinaceous food, and have muscular stomachs or gizzards, while the other Weavers of the same size found here live mostly on insects. While the other Weavers build solitary nests, a pair in a place in an inconspicuous situation, and never go about in flocks, the present species, like *Hyphantornis cucullatus*, is seldom seen except in flocks, and builds in colonies in conspicuous places about villages. From seeing these birds in life it would seem natural to me to put them and *Hyphantornis* in the same genus, as the Bulu do, and not in the same genus with *Sycobrotus*, &c.

No. 2000. Imm., sex? Bitye, R. Ja, Oct. 25, 1906. Stomach full of insect bits.

No. 2349. ♀ ad. Bitye, March 17, 1907. Small ova in ovary. Stomach not muscular, containing black scales. Iris whitish; feet dark (not quite black). Length of culmen 18 mm.

No. 2411. ♂ imm. Bitye, March 30, 1907. Stomach (non-muscular) containing insect bits. Iris yellowish white.

Nos. 2829, 2830. ♂ ♀ ad. Bitye, Oct. 29, 1907. Both shot by a boy "in *éjak*." The stomachs of both contained insect bits, mainly grasshoppers. Both had the iris whitish, and the feet dark or black. Length of culmen of male 18 mm., of female 16 mm.

No. 2834. ♂ imm. Bitye, Oct. 31, 1907. Stomach containing hard dry seeds and bits of some large insect. Iris whitish; feet dark. Length of culmen 17 mm. This bird is greyish and moulting, the new feathers being black.

The first three of these birds were put under *Melanopteryx nigerrimus* in a previous paper ('The Ibis,' 1908, p. 350); the other three have been collected since the lot reported on in Dr. Sharpe's paper.

These birds, of which the adults are perfectly black and the young dark grey, differ from the black adult males of *Melanopteryx nigerrimus* as follows:—(*a*) In the colour of the iris, which in that bird is conspicuously yellow, while in these it is conspicuously whitish. This is the point that I first noticed, and is what led me to note other points of difference. (*b*) The feet of all six birds are dark or black; those of *M. nigerrimus* flesh-coloured and also larger. (*c*) The culmen is ridged and narrow in these birds; the pits for the nostrils are also very large. (*d*) Some of them are females, which in *Melanopteryx* would not be black. (*e*) These birds have non-muscular stomachs and seem to live largely on insects.

These birds differ also from the perfectly black females of *Malimbus* that I have found:—(*a*) In the whitish iris—in *Malimbus* it is brown, so far as I have noted, and my attention was particularly drawn to that point; (*b*) in the longer bills—note measurements above; (*c*) in that some of them are males.

I make this note of these six specimens to call attention to them. They do not seem to belong to any species that I know. I do not even know what genus to put them in, for they have no red in their plumage, not even the males, and so cannot go into *Malimbus*; and they are debarred from *Melanopteryx* by the fact that the males and females are alike. Perhaps they are Alexander's *Melanopteryx maxwelli* from Fernando Po ('The Ibis,' 1903, p. 355).

1354. Ploceus fusco-castaneus (Boc.).

Cinnamopteryx fusco-castaneus Sharpe, Ibis, 1908, p. 350.

This species seems to belong to the solitary and insect-eating group of Weavers, and not to be placed naturally so near to *Melanopteryx nigerrimus* as it is in the 'Vögel Afrikas.' Nos. 1854 and 1855 were evidently a pair, shot together, as so many of my specimens of *Malimbus* have been. No. 2626, the young one, was in company with a *Malimbus rubricollis* in an *éjak* in the forest.

Amblyospiza saturata. [Kô-Esông.]

Sharpe, Ibis, 1908, p. 353.

This bird I have found only in the Ja district, and there only in localities where there are extensive patches of the big cane-like grass *Panicum maximum*, or "ésông" in Bulu. The Bulu name of this bird is the name of the grass combined with "kôs," meaning "parrot." The name "parrot" must be given on account of the big bill of these Weavers, or because, when perched, they hold themselves in a peculiar parrot-like erect position, made necessary, apparently, by the weight of their bills. Once, while watching one of these birds thus perched, I saw it open its mouth and heard it sing a pretty little canary-like song, consisting of some "cheeps" ending in a trill.

Though the bird is not very plentiful here, a number of its nests have been found and shown to me, mostly by one man, who seems to have discovered a place where they nest, though they do not, I think, build together in a close colony. The nests are large globes, six inches or more in diameter, attached by one or both sides to stems of the *ésông* grass or to other plant-stems. They are always woven entirely of fine shreds resembling flax both in fibre and in colour. From what plant the bird gets them I do not know, perhaps from the inner stems of the *ésông* also, which the bird could bruise and fray out with its strong bill and then tear off in fine shreds. The weaving is closer and neater than that of most Weavers. In some of the nests the entrance is a mere hole in the side of the globe, and the edges of the hole have a finished look, all ends being tucked in, and a "selvedge edge" formed. Seeing such a nest one would suppose that it was finished, and that this bird builds no vestibule as other Weavers do. But other nests have a vestibule built down two or three inches from this hole, growing smaller to the lower end, where the opening is not more than 30–35 mm. in diameter, and this vestibule shews traces of several selvedge edges at different heights, as if the bird had more than once intended to "call the job done" and then afterwards added further material.

The number of eggs found in a nest when the clutch seems complete is two or three; when a single egg is found it would probably be followed by one or two more. The eggs in a clutch of three measured 21–22 × 16 mm., but these were shorter than my other specimens, which measured 23–24·5 by 15·5–17 mm.

[The eight eggs vary in shape from a rather blunt to an oblong oval, and are practically devoid of gloss. The ground-colour varies from white or creamy white to pale rufous, and is sparingly marked all over with spots and dots of pale brown, light red, or dull maroon-red, which are more numerous towards the larger end, where they are often more or less concentrated into a zone.—O.-G.]

1421. PYROMELANA FLAMMICEPS. [Kulesô.]

Sharpe, Ibis, 1908, p. 343.

I have seen this bird only in the region of the Ja, where it is common, and at the breeding-season very conspicuous. The males change from the plain to the breeding-plumage in July. After that they are often seen, like great flaming red flowers blossoming on the bushes and tall grass of waste ground, for the remaining months of the year. I have seen nests and eggs in September, October, and November. The birds lose their gorgeous dress about January, and pass the following months in plain sparrow-like plumage, males and females looking alike. They go about then in small flocks and attract little attention.

In a recent article in 'The Ibis' (1908, p. 269) Mr. Ogilvie-Grant reports a bird in Mr. Carruthers's collection, obtained at Kasongo on the Upper Congo, as having partially assumed the breeding-plumage; the date was in January. With this agrees the statement of Böhm quoted by Reichenow, that he found eggs at Kakoma from the beginning of April to the end of May. Kakoma, in German East Africa, is in about 6° S. lat., and Kasongo in about 4° S. lat. Thus, if the dates are correct, the times of breeding and changing plumage in this species at my place in W. Africa, a little north of the Equator, are exactly the reverse of those in Central and East Africa, a little south of the Equator.

The breeding males use all means to attract attention. As if their flaming plumage was not enough in itself, they perch on the most prominent bushes and grass-tops, and fly from place to place slowly and with much fluttering of wings, all the while singing their little chattering, but rather sweet, song.

The nests are about the size and something of the shape of those of the Ngas (*Heteryphantes nigricollis*). But they are more loosely constructed than those of most Weavers, and have the entrance wide, and its edges with all the ends loose, giving them an unfinished appearance. In this and in the use of many fine grass-tops for the inside or lining of the structure, and more particularly in the fact that the nests are not hung or tied to a twig but merely set in the forks, these birds shew their relationship to the Spermestine division of the family rather than to the Ploceine.

The number of eggs found in a nest is two or three. Five that were measured varied thus: 18–20 × 14–14·5 mm.

[Six eggs of the species are of a somewhat oval form and distinctly glossy. The ground-colour is pale greenish-blue, and is generally very sparingly marked, especially towards the larger end, with rounded spots of purplish-black or deep purplish-lilac.—O.-G.]

1447. SPERMESTES CUCULLATA. [Aseleke.]

Sharpe, Ibis, 1908, p. 345.

With this bird we come to the first species of the tiny Weavers that go about in flocks when not breeding and here form such an interesting part of the bird-world in open grassy places ;they all avoid the dark forest. This particular species I never found at Efulen, but it is common on the Ja, where the open country is more extensive. On my way from the interior down towards Efulen and the coast, at many grassy and reedy places near the streams along the road, I saw little flocks of this species. Perched on grass-stems all around, they would wait till one was almost opposite to them on the path, and then fly up together with the faintest little twittering sounds, and move in perfect unison, like a squad of well-drilled little soldiers with their neat black and brown and white uniforms, to a new station a little further on.

1450. Spermestes poensis. [Aseleke, or Ejile.]
Sharpe, Ibis, 1908, p. 344.

This species is common in every district where I have been, including the Njiem (or Zima) country down the Ja, though, of course, it is confined strictly to the open village-clearings. Both kinds of Aseleke are caught by boys in snares baited with tender grains of corn.

Nests of these birds are not infrequently found in the tops of the small trees about the villages. A very favourite site is in the thick tree-top formed by the sprouts that grow out from the tall stump left after a tree has been cut down some ten or twelve feet from the ground, as is the common practice near villages, for fear of the wind blowing the tall trees down on the houses. Into such a low and thick tree-top I watched a little *Spermestes poensis* fly repeatedly, each time bearing a long bunch of the grey beard-like *Usnea* that it brought from the limb of a tall old forest tree not far away. It flew with evident effort, for the bunch was much longer than the bird itself. This plant is a favourite building-material of this species. Often the outside of the bulky nest is of this, and the inside, with the tubular entrance, is of fine adhesive and hair-like grass-tops. The nest is shaped like a water-bottle laid on its side, with the mouth and neck horizontal.

Eggs of different species of *Spermestes* and *Estrilda* have been shown me a number of times in the nests, but usually it is impossible to be certain to which species they belong. In one nest were five nestlings, and in another six, which in both cases were old enough to shew that they were those of *Spermestes poensis.* When the tiny things opened their mouths they displayed bright yellow palates and tongues, with circular black lines running around the inside of the mouth.

1488 *c.* Estrilda astrild occidentalis. [Zok-Osesang.]
Sharpe, Ibis, 1908, p. 343.

This is another bird which I have found only at the Ja, where there is so much country suitable for these grass-dwelling little Weavers. It is smaller than any of the other species found here, as its body after skinning proves, though measurements of the wing and tail shew no difference from its nearest relatives. It is in joking allusion to its size that the native boys name it "Zok Osesang" ("zok" meaning "elephant").

1496. Estrilda melpoda. [Osesang, Osanze, or Ejile.]
Sharpe, Ibis, 1908, p. 344.

This is a common little species both about Efulen and at the Ja, but I have never found its nest—at least a nest that I knew certainly to belong to it. It has been heard on two or three occasions singing a pretty song.

1499. Estrilda atricapilla. [Osesang, Osanze, or Ejile.]
Sharpe, Ibis, 1908, p. 343.

This is the most abundant *Estrilda* in every place where I have collected. Two of my specimens (they were not breeding, for the month was March) were caught after dark by boys in an old Ngas's nest (*Heterhyphantes nigricollis*), where they had gone to roost.

Among the numerous nests of Estrildine birds shown to me that were not certainly identified, one nest, and I think two, undoubtedly belonged to this species. A little girl at Efulen found one nest and saw the bird go in ; she quickly closed the entrance with her hand and brought me the nest with the little prisoner in it, besides two eggs. This nest was of the water-bottle shape already described under *Spermestes poensis,* but was composed entirely of fine grass-tops, with no *Usnea.* The girl found it set in the forks of a shrub at about the height of her shoulders from the ground. Another nest at Efulen, which I have good reason to think belonged to *Estrilda atricapilla*, was very curious in that it was double. Above was a water-bottle-shaped nest like that just described, and it was empty. Below was an addition pressed against the main nest like a small growing onion flattened against a larger. The addition had an entrance of its own, and contained five little white eggs. It seemed to be used for breeding-purposes, while the main nest was used merely for a sleeping-place, probably by several birds.

Different reasons make me think that in this and other *Spermestinæ* several of the little hen birds lay in the same nest. The five eggs just mentioned were all fresh, and if one bird had laid them all the first would already be somewhat incubated. The nests are extremely large for such small birds, and would probably be built by several in partnership. Five and six (note the six young of *Spermestes poensis* above) is an unusually large number to be the brood of one small bird in this country.

The two eggs brought by the little girl mentioned above measured 13 × 10 mm. The five eggs from the double nest were just like them, but a trifle longer—14–14·5 mm. long by 10–10·5 broad.

[Five eggs are of a rather long and perfectly oval form, pure white and almost devoid of gloss.—O.-G.]

1539. Vidua serena. [Bendenga-Osesang.]

Sharpe, Ibis, 1908, p. 343.

Though found wherever I have collected much, this Widow-bird is nowhere abundant. Even the breeding males have not been seen very often, and of course the others attract very little attention. Whenever I have seen the plain birds they have been mingled in the flocks of little *Estrildæ.*

The breeding males fly with much jerking of their long tails—for display, not because of any difficulty in supporting them. Sometimes an individual remains in the air at one spot for some moments, fluttering its wings and waving its tail. While doing this I have heard one make a vigorous twittering noise; another, perched on a dead tree, was heard to sing a few notes that could really be called a song.

These birds have been seen in their breeding-plumage and recorded in June, July, and August, while probably they keep it longer—perhaps for the same months as *Pyromelana*, of which an account was given above.

1545. Passer griseus. [Mvakumba.]

Sharpe, Ibis, 1908, p. 342.

The nests of these Sparrows are loose piles of trash, including feathers of fowls. They are placed in all sorts of situations about a village, such as on the ridge-poles of houses under the projecting roofs, and in bunches of plantains and bananas growing behind the dwellings. Two eggs or nestlings are found in a nest. The eggs measure 21 × 15 mm.

[The eggs are of a rather broad pointed oval shape and slightly glossy. The ground-colour is white or yellowish-white, heavily blotched and spotted over the greater part of the shell with dark lilac-grey and umber-brown. In one egg the grey markings predominate and a good deal of the ground-colour is visible; in the second the brown markings are numerous and cover the greater part of the shell.—O.-G.]

1614. Emberiza cabanisi.

Sharpe, Ibis, 1908, p. 342.

The Bunting of this country sings a well-marked little song—not very pretty, but a song in intention,—which can never be mistaken when once heard. It sings perched on a twig in some of the smaller trees of the open land around the villages. The white on its outer tail-feathers, seen from beneath, gives the tail the appearance of being forked.

1630. Motacilla vidua. [Amalaka.]

Sharpe, Ibis, 1908, p. 341.

On the few occasions on which I have seen this (or a similar) black-and-white Wagtail, the bird has been walking with its characteristic motion on the mud or sand or driftwood at the margin of a stream, or flying swiftly over the water from one such place to another, sometimes with a sharp cry. But my specimen (No. 1873) was obtained while walking in the village street. Wading birds are often seen in such a situation, but this bird was shot in July, and was probably a resident (unless it could possibly have been on migration from the south).

1636. MOTACILLA FLAVA. [Amalaka.]

Sharpe, Ibis, 1908, p. 341.

The Yellow Wagtail is often seen in the village streets and much-frequented paths in the latter part of October, in November, and even in December. I have not yet noted it in other months. If it goes further south and returns again in the spring, I have failed to observe it on its return.

1647. ANTHUS TRIVIALIS.

Reich. V. A. iii. p. 311.

No. 2910. ♀. Bitye, near the River Ja, Feb. 23, 1908. Shot in a cassava-patch.

1743. PHYLLOSTREPHUS CLAMANS. [Mali.]

Bleda clamans Sharpe, Ibis, 1907, p. 460.

In this paper I have not often departed from Dr. Sharpe's naming of my birds. But I am glad of any authority that I can follow in removing this bird and others of Reichenow's genus *Phyllostrephus* from such close association with *Bleda notata* and *B. syndactyla*. These last are not only quite different in appearance, but are forest-haunting, insect-eating birds, often caught in snares among the dead leaves on the ground, whereas the species of *Phyllostrephus* mentioned in this paper are birds of the opener country, never caught in snares on the ground, while they live on fruit, and have lively and peculiar call-notes, in which the different species resemble each other.

The present species is given by the Bulu the same name as the *Indicator*, "Mali," probably from the resemblance in colour, and especially in the white outer tail-feathers. It is a bird often found in the primeval forest, but still oftener in the second-growth forest, like that mentioned under *Ploceus bicolor* (above, p. 42), which consists largely of "aseng" trees (*Musanga smithii*), on the fruit of which it feeds. Its principal food is fruit, but it eats insects also. It has a call which I may express as "pee-ew!" uttered with energy, and accompanied by the spreading of the tail so as to display the white feathers. It has another note which may be called its song, using the word "song" with some latitude. Once I came upon several of these birds in the tree-tops near together, answering each other with "pee-ew!" But usually they are found singly or a pair together. No. 1869 was shot while crying "pee-ew!" and spreading its tail; it was a female and in breeding condition. After it was shot its mate was heard crying "pee-ew!" followed by a little song, though it was not seen. Nos. 1918 and 1919 were also mates that were answering each other.

Phyllostrephus indicator (Reich. V. A. iii. p. 390) probably has similar ways and a similar voice. It cannot be distinguished from *P. clamans* unless it is in the hand, and some of the birds observed may have been *P. indicator*. But those that were seen and afterwards shot, so as to be identified, belonged to *P. clamans*.

PHYLLOSTREPHUS VIRIDESCENTIOR. [Ntyandô.]

Pycnonotus viridescentior Sharpe, Ibis, 1907, p. 464.

No. 2509. ♀ ad. Iris brown; feet blue; bill black. Two large empty sheaths of ova in ovary; oviduct large. Caught on the nest, at evening.

The nest was a shallow cup exactly like that of *Pycnonotus gabonensis*, set in the triple fork of an "ôkôm" bush, and was found not far from the village. It was composed of shreds of the bark of weeds and leaf-petioles, with fine grass-stems inside. It measured internally in the two diameters 65 and 55 mm. The two eggs found in it measured 25·5 × 17 mm. and 23·5 × 17 mm.

[Two eggs are of an elongated pointed oval shape and slightly glossy. The ground-colour is pale greenish-white, with obscure clouded markings of olive and grey concentrated into an irregular zone round the larger end; over these lie various irregular lines and scrolls of umber-brown, producing a marbled appearance.—O.-G.]

1754. PHYLLOSTREPHUS SIMPLEX. [Nkes.]

Bleda simplex Sharpe, Ibis, 1907, p. 459.

The "Nkes" is not a retiring bird. When I called it "shy" in my former note ('The Ibis,' 1905, p. 96) I ought to have spelled it "*sly*." Its peculiar "talk" is one of the commonest sounds in the bushes about villages, yet it flits about so quickly and hides so adroitly that it is hard to shoot. And when I said "it goes alone or in pairs," I might as well have omitted the word "alone." I never saw any other bird so continually accompanied by its mate. A pair of them seem inseparable and are always very near each other. When one "talks," the other chimes in so promptly that the two often sound like one bird; and in the days before I was fully acquainted with the "Nkes" I must have often supposed that I heard only one when there were really two.

1756. PHYLLOSTREPHUS FLAVIGULA (Cab.). [Nkes.]

Bleda flavigula Sharpe, Ibis, 1907, p. 458.

No. 2386. ♀; oviduct and abdomen of a sitting bird. Bitye, March 28, 1907.

This bird is called in Bulu by the same name as *P. simplex*, and my boys, who have shot it, say that it is similar in habits and voice to that bird. My specimen (No. 2386) was caught on the nest. This much resembles that of *Pycnonotus gabonensis* except in material, for it is entirely made of rather coarse leaf-petioles, with a few dry leaves in the base, and some brown adhesive woolly fibre-like cobweb holding it together on the outside. It was set in the angle of a palm-leaf stalk. The one egg was too much broken to measure, but appeared to be about the size of that of *Pycnonotus gabonensis*.

[A broken egg appears to have been of a blunt pointed oval shape and slightly glossy. The ground-colour is pale creamy-white, covered all over with spots of umber-brown and with spots and small blotches of dark grey and lilac-grey, most numerous round the larger end.—O.-G.]

1759. Phyllostrephus orientalis.

Phyllastrephus scandens orientalis Reich. V. A. iii. p. 398.

Nos. 2873. ♂, 2874. ♀, 2881. ♂. River Ja, Jan. 25 & 28, 1908.

These specimens were shot on the bank of the River Ja, where I was camping for a few days. The first pair were heard making a great racket in the tree-tops over my tent when I woke in the morning. Their noise was peculiar, being of the same sort of ringing and yet guttural tone heard in the "talking" of the Ngomejal (*Phyllostrephus leucopleurus*), but with more of the ringing quality. The pair were making this noise together, both "talking" at once, like the "Nkes" (*P. simplex*). Their breeding-organs were much enlarged. These birds must keep to the river-bank; else I should have got them where I had collected a great deal before, only a few miles away.

1760. Phyllostrephus leucopleurus. [Ngomejal.]

Bleda leucopleura Sharpe, Ibis, 1907, p. 460.

I cannot characterize the "Ngomejal" better than I have done already ('The Ibis,' 1905, p. 97). But I can add that a nest of the bird has been shown to me, though too badly torn up to be described. It was taken in October, on a swamp-palm-tree, and contained two well-grown nestlings.

1782. Andropadus virens. [Otok.]

Reich. V. A. iii. p. 412.

Eurillas virens Sharpe, Ibis, 1907, p. 462.

Here, again, I use the generic name adopted by Reichenow, so as to have all the species of "Otok" in the same genus, for they are certainly much alike.

My note under the head of "*Eurillas camerunensis*" ('The Ibis,' 1907, p. 462) should have been attributed to *E. virens*. This is the commonest species. It is that of which the notes "have a clear, ringing tone that is pleasing," as I said previously ('The Ibis,' 1905, p. 97) without knowing the species certainly.

Besides the nest with eggs already reported ('The Ibis,' 1907, p. 462), another has been found. This was on a yam-vine in an old garden. There were two eggs in it, which measured 21·5 × 15 mm. and 22 × 15 mm.

[Two eggs of a nearly perfect oval shape; the ground-colour is pinkish-white, marked all over with rather obscure longitudinal reddish-brown markings and densely freckled and indistinctly clouded with obscure purplish-grey markings.—O.-G.]

Andropadus efulensis. [Otok.]

Sharpe, Ibis, 1907, p. 461.

No. 2802. ♀; abdomen, ovary, &c. indicating a sitting bird. Shot on the nest.

The "Otok" with the yellow moustachial streaks is sometimes called "Otok afan," that is, "forest Otok," because it is more inclined than the other species to the forest; but it is not strictly a forest-bird. Its notes, which it utters with great persistency while hidden in a thicket, are not musical, and deserve the name of *noise* or *racket* rather than of song. The yellow streaks down the sides of the throat, as is the case with all such markings in birds, are more conspicuous in life than in the skin. This species spreads out the plumage of the chin and throat, giving the fullest effect to the yellow feathers.

The nest (on which No. 2802 was shot) was a rough oblong cup of dried leaves and weed-stems, with fine horsehair-like vegetable fibre for lining, about 65 and 45 mm. on the inside diameters. Two eggs were in it, which measured 23·5 × 16 mm. and 24 × 16·5 mm.

[Two eggs are of a slightly pointed oval shape and slightly glossy; the ground-colour is white, rather sparingly spotted all over with purplish-brown and grey and with some larger blotches of paler and darker grey round the large end.—O.-G.]

PYCNONOTUS GABONENSIS. [Nkwe'ele, or Kwalawata.]
Sharpe, Ibis, 1907, p. 463.

No mistake was made in calling the Nkwe'ele "a versatile bird" ('The Ibis,' 1905, p. 98). It has many habits usually associated with other birds. It so frequently clings by its claws to the bark of a tree, using its tail for a support, that the tail-feathers become broken, and it is rather rare to see a bird with all its tail-feathers whole. It eats fruits, but seems to prefer insects. When an army of driver-ants spreads itself among the bushes of the open land around villages (the Nkwe'ele never goes into the forest), these birds may be seen busily pecking and eating something as they hop about to keep out of the way of the ants. But it is not the ants themselves that they eat, but the other insects—beetles, cockroaches, crickets, &c.—that are driven by the ants from their hiding-places. This I know in one case at least by examining the stomach of a bird shot among the ants.

An egg measures 24·5 × 17 mm. (See also 'Ibis,' 1907, p. 463.)

[Three eggs of the usual Bulbul type, of a rather bluntly pointed oval shape and slightly glossy; the ground-colour is white, densely and finely mottled and freckled all over with pale lilac-grey and light red, the markings in some cases being more or less concentrated into a zone round the larger end.—O.-G.]

1829. ANTHOTHREPTES FRASERI.
Sharpe, Ibis, 1908, p. 340.

This plain green Sunbird is a bird of the forest, and was more abundant at Efulen than at the Ja. It is a common member of the *ejak* (see 'Ibis,' 1905, p. 462). Its food consists of insects of all kinds, as well as spiders.

The remarkable little song of some small forest-bird, to which I have often listened, I am *almost* satisfied is sung by this bird, as my boys say they have heard the bird sing it, and I myself have heard the song in places where it was to be expected. It consists of four musical notes in a descending scale, repeated, in a fine, sweet voice, with great rapidity, over and over again, for almost as long as a man will stand and listen, without a pause for breath. It is a performance that arrests the attention. It seems to have impressed the mind of the African Thrush also, for these notes have been heard to mingle in the Thrush's song.

1833 *a*. ANTHOTHREPTES HYPODILA. [Zesol.]
Sharpe, Ibis, 1908, p. 340.

1835. ANTHOTHREPTES TEPHROLÆMA. [Zesol.]
Sharpe, Ibis, 1908, p. 340.

These two species are easy enough to distinguish from each other when in the hand—the males at least. Yet in my notes they are not always distinguished, and so I speak of them together. Both are found in every place where I have collected long. They live among the bushes and smaller trees of the open cleared land, not in the forest. Their food is more varied than that of most Sunbirds. They often eat small fruits; and a certain kind of hard seed as large as a small pea is sometimes swallowed whole, almost filling the little stomach. Among the insects most frequently found in stomachs are small moth-larvæ and spiders. In the stomach of one bird (*A. hypodila*) were four or five minute snail-shells.

Besides many nests of small Sunbirds found and not identified was one which, from the well-grown nestling in it, was seen to belong to one of these two species. It was hanging from a slender bough, and was composed of fine fibres; it was decorated outside with whitish bits of dry leaves and lichen, and abundantly lined with very soft white plant-down.

1840. CHALCOMITRA OBSCURA. [Zesol.]
Sharpe, Ibis, 1908, p. 338.

This is probably the most common species of Sunbird here, considering that it is found not only in the bushes about villages where most of the Sunbirds are common, but also in the forest. Its little song has been already described correctly ('The Ibis,' 1908, p. 338). The food is nearly always found to be spiders. Sometimes in the stomachs I have found what looked like little particles—stamens, &c.—of flowers.

An individual of this species was found caught in the web of a big black-and-yellow spider, a sort of retribution for the many little spiders it had killed and eaten.

Nests and eggs have now been certainly identified by having the bird caught on the nest, as Bulu boys well know how to do. These nests are hung from a twig and composed of fine fibres, some of which pass over the twig, mixed with dry leaves or grass in varying proportions, with little or no down inside, differing thus from the nests of some Sunbirds.

The eggs are two in a clutch. They measure 17–18 mm. × 13 mm. In my notebook I speak of some of them as of a dull (grey ?) colour, with blackish spots and irregular marks scattered sparingly over them. But the two eggs from one of the nests—just as certainly identified as the others—differed greatly from them in wanting the blackish spots and markings. (I seem, unfortunately, to have left behind the eggs of this species, and could not shew them to Mr. Grant.)

1848. Chalcomitra cyanolæma. [Zesol.]
Sharpe, Ibis, 1908, p. 339.

This is rather a common Sunbird, both about Efulen and in the Ja district. It is seen around flowering shrubs and vines. The food found in the stomach was sometimes spiders, sometimes hard seeds resembling grape-seeds, sometimes what appeared to be bits of flowers, as if the flowers themselves had been picked to pieces and swallowed. In the stomachs of these and other Sunbirds is often found a liquid, which may consist of the nectar of flowers mixed with the stomach juices. I did not feel like tasting it to find out.

1857. Chalcomitra angolensis. [Zesol.]
Sharpe, Ibis, 1908, p. 338.

This Sunbird is rather common, and is seen most often about the flowering twigs of some tree standing in an open place. The stomach-contents consist mainly of insects, including spiders. These and other Sunbirds *do* often hover on the wing before flowers, like Humming-birds, but only for a few moments at a time.

The beautiful velvety dark brown of the males of this species becomes much faded, or bleached, when the plumage is worn, so that in the moult the new feathers are much darker than the old.

1866. ANABATHMUS REICHENBACHI. [Zesol.]
Sharpe, Ibis, 1908, p. 340.

Of this little Sunbird only two adults and one young specimen were obtained, all at the Ja. The last adult and the young one were caught, along with a *Cinnyris chloropygius*, by a boy, at evening, at their roosting-place among tall weeds near a village.

Both the adult specimens were females and are wrongly marked "♂" in Dr. Sharpe's paper. This fact is remarkable, because they have the bright colours usually possessed by the males alone among the Sunbirds, including the yellow pectoral tufts. I was surprised at the time of skinning to see that they were females, and so looked carefully to be sure that there was no mistake. In both cases the ovaries shewed small ova. When I examined the second specimen and found it a female, I put the body in spirit and sent it to the Museum; but it seems not to have arrived there. Lately I have found in Reichenow's 'Vögel Afrikas' (iii. p. 468) the statement, under this species, that "the female is like the male in colour."

1874. CINNYRIS SUPERBUS (Shaw). [Odima-Zesol.]
Sharpe, Ibis, 1908, p. 338.

This, the most richly dressed and largest of our Sunbirds, makes its appearance, rather infrequently, about flowering shrubs and trees, and most often about the great opening buds of staminate flowers at the end of a young bunch of plantains or bananas. It frequently perches for a moment on the plantain-bunch, but when thrusting its bill among the flowers it often hovers on the wing as well. Though this hovering, in the manner of Humming-birds, is never kept up for long at a time, it is a mistake to say that Sunbirds do not hover at all.

The stomach-contents of these birds consist most frequently of spiders and a liquid. In my notebook, under one specimen, this liquid is stated to have been "sweet"; I must have ventured to taste it.

In my paper on "Breeding-Seasons" ('The Ibis,' 1908, p. 568) are some remarks about the moulting of these Sunbirds.

1884. CINNYRIS CHLOROPYGIUS. [Zesol.]

Reich. V. A. iii. p. 486.

Cinnyris preussi Sharpe, Ibis, 1908, p. 338.

As the little Sunbirds called "*C. preussi*" in the paper in 'The Ibis' cited above have the upper tail-coverts green like the backs and not violet, they would seem to be referable to *C. chloropygius*. Most of my birds were too small to be *C. preussi*, but they varied in size a good deal.

This, the smallest of our Sunbirds, is the most abundant species on the shrubs and flowering trees of the open country, though never seen in the forest. Many individuals assemble about the flowers, and a tree in blossom may actually be full of them, at a distance looking like insects flying among the flowers. They move very quickly. When one of these little fellows passes near it is scarcely visible, from its smallness and the swiftness of its flight. They are rightly called Sunbirds, in that they seem to like the sunshine, even when it is hot. At mid-day, when other birds have sought the shade and are still, these little Sunbirds are flitting about as actively as ever.

They are generally silent, except for a little chirping, like that of an insect, made in the smallest of voices as they flit by. But the males have a pretty little song that is occasionally heard.

The food of this small species seems to be about the same as that of the larger Sunbirds, consisting mostly of small insects, mainly spiders. In some stomachs were found what looked like tiny bits of flowers that had been picked and swallowed. Sometimes tiny shells and grains of sand were found!

Many of the nests of Sunbirds found hanging on bushes probably belong to this species. Some of them have been identified by having the bird caught in them; but the birds thus caught have always been females, and it is assumed that the plain-coloured females corresponding in measurements with the males of this species really belong to it. These nests are constructed, like those of other Sunbirds already described, of stringy fibres more or less mixed with dry leaves and lichens, and lined with fine white pappus-down. Though the entrance to the nest is very small (20 mm. in diameter, or just fitting the thumb) the inside is roomy for so small a bird. The nests with sitting birds were all found in the month of April, in different years. Though this was partly a mere accidental coincidence, since breeding birds were killed in several other months, yet doubtless it shews a preference for that month for breeding, when rains, but not the hard pouring rains, refresh the vegetation after the drought. The number of eggs of this Sunbird was never more than two, and they varied little in size; length 14–15 mm., breadth 10·5–11 mm.

[Five eggs are of a pointed oval form and are more or less glossy. The ground-colour is pale bluish-white, with a strongly marked zone round the larger end, consisting either of separate spots or of confluent clouds and longitudinal streaky markings of dark grey, with a few minute blackish surface-markings.—O.-G.]

(I wish here to mention a number of specimens of tiny Sunbirds which I have collected, in size and in the bill corresponding to this species, but with plain olivaceous plumage. They have been omitted from Dr. Sharpe's paper. They might be thought to be females or young males of *C. chloropygius*; but among them were many males with the testes large—sometimes extremely large. And some that were moulting shewed the new plumage that was just growing to be of the same colour as the old. These males in plain plumage appear to be very numerous.

Either the first plumage of *Cinnyris chloropygius* continues for a long time after the bird has begun to breed, and there is at least one moult before the changing moult; or there exists another species of the same size having a plain olivaceous plumage throughout life.)

1914. PARUS FUNEREUS.

Pentheres funereus Sharpe, Ibis, 1908, p. 337.

The two specimens obtained were all that I have ever seen. The first was shot on a little tree at the back of my house at Efulen, where it was in the act of pulling to pieces a large caterpillar. In the stomach were found bits of the caterpillar, just swallowed. When this bird was freshly killed, the nostrils were seen to have a raised ring round them, as in *Indicator*; when the specimen dries, this is not apparent. The other example was obtained at the Ja, shot by a boy, who said that there were two together.

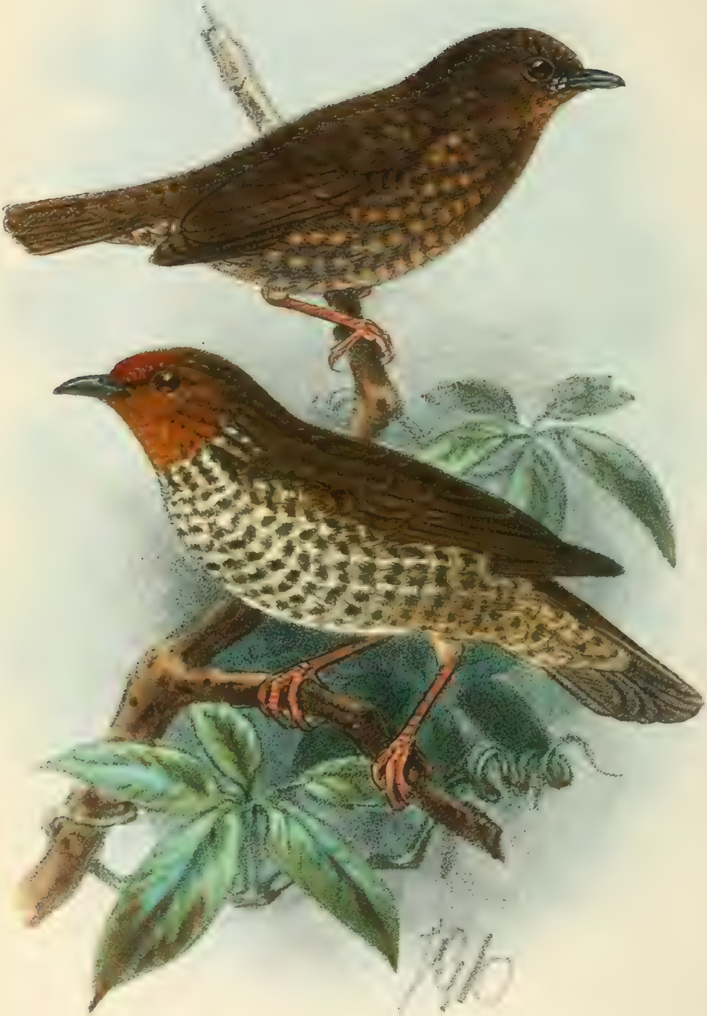
1913. PHOLIDORNIS RUSHIÆ.

Sharpe, Ibis, 1908, p. 324.

These pretty little creatures, which would stand a good chance of a prize for the smallest of birds, are generally seen, three or four together, flitting about in the tree-tops, catching insects, or rather picking them off the twigs; for the insects most frequently found in their stomachs were the *Cocci* that adhere to the bark of twigs. A favourite foraging-place with them seemed to be the parasitic plants, like mistletoe, found on the branches of trees. When feeding they were heard to make a scarcely audible little twitter.

One of these little birds was brought to me alive by a boy, who said that he had caught it in his hands. The way in which he came to be able to catch it was evident when I examined the bird, for its wing-quills were found to be stuck together by the strong, viscid, yellow threads of a spider's web. This is not the first small bird which I have known to be caught by becoming entangled in the web of a certain kind of large black-and-yellow spiders.

Ibis. 1909. Pl. II.



West, Newman imp.

PARMOPTILA WOODHOUSII.

1944. **Parmoptila woodhousii.** (Plate II.)
Sharpe, Ibis, 1908, p. 323.

Nos. 2130, 2130*a*. Bitye, Jan. 4. 1907. Young, caught in the nest. The four small white wattles at the gape (see the upper figure in the Plate) were conspicuous.

These birds are seen going about in little companies of half-a-dozen, both in the forests and in the bushes or open land. Their food is insects, largely small ants. The four specimens Nos. 1784–7 were killed at one shot while engaged in picking from a bush the small ants that were swarming over it.

In my note already published in 'The Ibis' (1908, p. 324), I refer to the large dome-shaped nests of these small birds. I have seen more of these nests since, and there is now no doubt about their belonging to this species. The four immature specimens Nos. 1356–9 were caught in such a nest. Another nest, shown me in a better state of preservation, was a rough mass as big as a half-gallon measure, composed of fine dry grass, with a quantity of green moss thrown loosely over the outside. It was placed on a forked twig which was growing out horizontally. The entrance was at one side and had a sort of portico covering. An egg, taken from a nest in which were also two young birds, measured 14·5 × 10·5 mm.

[The egg is of a distinctly pointed oval shape, devoid of gloss and pure white.—O.-G.]

2002. **Cisticola erythrops.** [Abankwat, or Tinkwat.]
Sharpe, Ibis, 1908, p. 317.

This lively and bold little bird has already been characterized in my brief note in 'The Ibis' (*l. s. c.*). Its little song was spoken of, and also its sharp-toned notes, which are imitated in the name "*Abankwat,*" the last syllable being brought out with an emphasis almost like the crack of a whip. When these notes are abbreviated at the beginning, they resemble the shorter name "*Tinkwat.*" Still another call often uttered by this Grass-Warbler remains to be described. It is merely a long-continued and rapid repetition of one sharp note. The bird, sitting on some bush or plantain-leaf, starts with its rapid "queek! queek! queek!" &c., and continues without a pause for breath until you would think that it must be suffocated and tumble from its perch from exhaustion. It must be able to breathe while using its voice.

Many nests of this bird have now been found. They are constructed like those of the Tailor-bird (*Orthotomus sutorius*), as they are described, being set in a sort of basket or sack formed of large leaves sewed together. Leaves with an adhesive surface are preferred. They are united by stitches made by puncturing the leaf-edge and passing through it a thread of what looks like several united fibres of yellow-brown spider's web. The thread is often only passed through and knotted on the outside, but sometimes is brought round and passed through again, making a true stitch. The nest itself, set in this sack of leaves, is a deep cup of dry grass-blades, with the edge built higher on one side than on the other. Inside this cup is a lining of the fine brownish pappus or down from the seeds of some plant. Other related birds making similar nests use different materials. The nests of this species seem to be always of grass-blades, and the downy lining is brown, not white. The identification of the nests has been effected by shooting the bird on the nest, or catching it on the nest at evening. Usually only two eggs are found, sometimes three. My eggs vary in measurement thus: length 16–19 mm., breadth 12–13 mm.

[In a series of eleven eggs the shape varies from a perfect oval form to a rather long pointed oval. The shell is distinctly glossy. The eggs are of two types. In the first the ground-colour varies from bright bluish-green to pale dull greenish-white, and the markings consist of rather large spots and blotches of pale red, reddish-lilac, and lilac-grey, which are either scattered over the entire shell or mostly concentrated round the larger end. In the second type the ground-colour is creamy-white, densely and minutely freckled all over, but especially in a zone round the larger end, with light red-brown and grey.—O.-G.]

2016. Calamocichla poensis. [Oto'o-Bisông.]
Sharpe, Ibis, 1908, p. 318.

The Bulu name of this bird and the scientific name of the genus mean almost the same, "Otok" being the name of some of the common Bulbuls, and "bisông" meaning "canes" of the big cane-like grass *Panicum maximum*. Both names are appropriate, for the bird seems never to be seen or heard outside the thickets of this big grass, which grows ten feet high, with the stalks close together. In such places it may be heard, but seldom seen, until it flits about among the grass-stems to within a few feet of you, when, if you shoot it, it is of no use as a specimen. Its notes are peculiar, being uttered in a sort of ventriloquial voice, and sound like human conversation in an undertone; sometimes they are sweet, reminding one a little of those of the Angôkòn (*Cossypha*).

2050. Prinia bairdi.
Burnesia bairdi Sharpe, Ibis, 1908, p. 326.

This is a lively little bird of the bushes and gardens about villages—lively in its movements, though generally silent. It is not always silent, however, for I have seen and heard it uttering a long succession of rapid notes without pause like *Cisticola erythrops*, as described above (see p. 67). When perched on a twig, this little *Prinia* has a way of jerking up its long tail till it points forward, making an acute angle with its back.

No. 1398 was shot in its nest, and No. 2538 was caught alive in its nest. Both the nests were brought to me torn from their setting, but I do not think that they were placed in a sack of leaves in the manner of *Cisticola erythrops*, but rather set in a great tangle of dried herbaceous vines. Both were made of dry strips of grass-leaves, with a lining of grass-tops—no down. They were deep, with one side so raised as to be partly roofed over, and were very large for the size of the bird. The eggs found in each nest numbered three. Those of one clutch all measured 17 × 12·5 mm.; those of the other, from 15 to 16 mm. long by 12·5 mm. broad.

[Six eggs are of a nearly perfect oval form and distinctly glossy. The ground-colour is pale bluish-green or greenish-white, either blotched and clouded, especially round the larger end, with pale light red and grey, or minutely and densely freckled all over with pale light red, forming a more or less distinct zone round the larger end.—O.-G.]

2073. APALIS BINOTATA.

Sharpe, Ibis, 1908, p. 320.

This rather rare little bird has been obtained only at the Ja. There it is found in the open country of old clearings, where it has been seen in small trees, or in the tangle of vines hanging from trees, hopping and flitting from twig to twig, looking for insects.

No. 1488 was shot with bow and arrow in its nest, and the bird and the nest brought to me. The latter was a loosely woven little pocket suspended from a twig, and composed entirely of the *Usnea* that fringes the limbs of old trees, with a very few brown gossamer-fibres to attach it to the twig, and a slight lining of fine grass. An egg in the nest was broken.

2093. CAMAROPTERA GRISEIVIRIDIS. [Tinkwat.]

Sharpe, Ibis, 1908, p. 321.

Very common amongst the brush of felled trees in plantations and gardens, through which it is continually threading its way, looking for insects. Its loud sharp-toned notes have already been described ('The Ibis,' 1908, p. 322). The note is not always repeated just five times, but sometimes six or eight times.

No. 1495 was shot with bow and arrow in its nest, which contained three naked young birds, just hatched. It was, with great ingenuity, attached to the stem and two large leaves of an "ajom" (*Amomum*) in such a manner as to hang from them, one of the leaves being arched over it so as to form a perfect roof. The main material of the nest was very fine fibres; over the outside was a covering of down like thistle-down, which in places was thrust through the leaves to form attachments. Another sort of wool, of tough yellowish-brown adhesive fibres, was used to form the stitches that held the edges of the leaves together, and also woven over the outside of the entire nest to hold the slippery thistle-like down in place.

2103. HYLIA PRASINA.

Sharpe, Ibis, 1908, p. 325.

A very common little bird of the tree-tops in the opener country and the borders of the forest—never found in the depths of the forest. It flits among the twigs hunting for its insect food, which is often found to consist of the *Cocci* that adhere to the bark of the twigs. It never perches fully in sight, like the similar little *Camaroptera*. A bird-call I had often heard coming from the thickest tree-tops or tangles of vines, which I called the "saw-filing note," because of its piercing shrillness, and because it was double, like the drawing of a file across a saw and back again, though it was not so grating and harsh a sound as the comparison would suggest, was at last traced to this little bird.

2105. STIPHRORNIS GABONENSIS.

Sharpe, Ibis, 1908, p. 325.

2106. STIPHRORNIS XANTHOGASTER.

Sharpe, Ibis, 1908, p. 325.

Though Reichenow's arrangement is followed here as elsewhere, it seems strange to associate these two species (*S. gabonensis* found in the coast-region and *S. xanthogaster* at the Ja) with such birds as *Camaroptera* and *Sylviella*. These latter and other similar Warblers are birds of the bushes and brush of open land, not particularly secretive, but escaping hostile observation by their plain colours, small size, and lively movements. The species of *Stiphrornis* inhabit the dark forest and seek their food on the ground, while they light up the gloom with their bright colours.

My specimens were obtained in snares baited with termites, along with birds of the genera *Alethe, Turdinus, Bleda, Neocossyphus,* &c. Young birds have spots on the wing-coverts, as have those of *Alethe.*

SYLVIELLA BATESI.

Sharpe, Ibis, 1908, p. 319.

Both my specimens of this species were caught or shot in their nests. The male (which had the testes very large) seemed to be sitting. The two nests were alike, and resembled those of some other small Warblers in being pocket-shaped; but in materials and structure they were peculiar. These small pockets were made of short leaf-petioles, not woven together, but held together loosely by gossamer-threads (of spider's or caterpillar's web) running all among them, and extending up over the twig so as to form the attachment, which is not at one point of the twig, but extends along for several inches. Thus the whole structure is as flexible as a knitted bag. All over the outside are many particles of trash hanging to the gossamer-threads, that tremble at the slightest breath. Inside the bag are a few fibres for nest-lining. A single egg was found in each nest; the two were just alike, except in size, one measuring 19 × 12 mm., and the other 16·5 × 11 mm.

[Two eggs are of a long pointed oval form and devoid of gloss. The ground-colour is yellowish-clay, thickly mottled all over with umber-brown and grey, the markings being more or less clouded and indistinct.—O.-G.]

2124. SYLVIELLA VIRENS.

Sharpe, Ibis, 1908, p. 319.

Two of my female specimens were caught in their nests, which were suspended in the bushes or grass. The nest is a nicely constructed little pocket like that of a Sunbird. In one nest were three or four tiny eggs, which got broken when the bird was caught; it could be seen, however, that they were speckled on a white ground.

2152. PHYLLOSCOPUS SIBILATRIX.

Sharpe, Ibis, 1908, p. 319.

My specimens were shot at different dates during the months forming the winter of Europe, the latest being March 26. All that I have shot or seen were in the tree-tops of the open land, where they were busily flitting about, pursuing insects. They seemed to prefer a certain kind of tree with open, spreading foliage; and more than once were seen in trees just coming into leaf, where the mucilage of the buds attracted insects.

2228 *b*. TURDUS PELIOS SATURATUS. [Etyito.]

Sharpe, Ibis, 1902, p. 95.

Merula saturata Sharpe, Ibis, 1908, p. 124.

To my brief note about the Etyito in 'The Ibis' (1905, p. 473) I have to add a description of the nest and eggs. But first I must say a word more about its song. Some individuals, at least, are as fine songsters as any Thrush that I know. One that I have listened to many an evening at Bitye could pour forth a song of endless variety, now mocking other birds, now uttering notes of its own, all in a full rich voice.

Nests of this bird are not infrequently found on plantains or at the base of the palm-fronds, about villages. They are always in damp places, and have been most often found in the rainy season; the base of the nest is always of damp, rotting fibres of weeds or plantains, and in one a weed-seed had germinated and was growing out of the side of the nest, which had eggs in it. The top part of the nest, however, is always dry—that is, composed of rootlets and small weed-stems. The number of eggs found was either two or three; they vary in length from 24 to 28 mm., and in breadth from 20 to 21 mm.

[A series of eight eggs, which vary in shape from a very wide blunt oval to a wide regular oval and are somewhat glossy. The ground-colour varies from bluish-green to pale bluish-white, and in one specimen it is warm cream-colour. Some specimens are mottled all over with pale red and lilac, others are similarly marked, but the markings are mostly confined to the larger end. The markings vary considerably in different specimens: in some they are larger and more distinct, in others they are finer and more clouded.—O.-G.]

EXPLANATION OF THE PLATES.

Plate I.

Caprimulgus batesi, p. 25. From the type.

Plate II.

Parmoptila woodhousii, p. 67. Adult (below) and young, shewing the white markings on the bill (above).

II.—*Contributions to the Ornithology of the Sudan.—No. III.*[*] *On Birds collected by Captain E. P. Blencowe in the Bahr-el-Ghazal Province.* By A. L. Butler, F.Z.S., M.B.O.U., Superintendent of Game Preservation, Sudan Government.

In December 1907, Captain E. P. Blencowe, of the Army Service Corps, who was proceeding to the Bahr-el-Ghazal Province in connexion with the transport arrangements for supplying the various military posts, kindly agreed to take with him a native boy whom I had trained to skin birds, and to collect for me such specimens as he had time to shoot along his line of march.

The following paper contains a list of birds which he obtained, with the localities and dates added and a few remarks.

Captain Blencowe left the Nile at Shambe, and travelled first to Rumbek (distance about 90 miles), crossing the Lau and Naam Rivers; then he marched to the Tonj River, crossing the Gell River on the way (distance about 75 miles over flat forest-country with black cotton soil); thence to Wau (about 70 miles—undulating, forest-covered, ironstone country); from Wau to Ukanda (15 miles—country flat, all forest):

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[*] See 'The Ibis,' 1905, p. 301, and 1908, p. 205.

from Ukanda along the Such River to Raffile (30 miles—ironstone forest-country); south along the Such River to Kojali (63 miles—forest-country, black cotton soil, many "khors" with high grass); from Kojali to Tembura (55 miles—country hilly, forest-trees smaller, many large granite rocks): from Tembura he returned by the same route to Wau; travelled from Wau to Meshra-el-Rek (114 miles, over the route along which I collected in 1907); and journeyed from Meshra to Khartoum by steamer.

The birds were thus almost all obtained between 7° and 8° N. lat. and 27° and 31° E. long. Many of them are not mentioned in my two previous papers on the birds of the Sudan ('Ibis,' 1905, p. 301, and 1908, p. 205).

I am indebted to Messrs. E. Hartert, Oscar Neumann, and Ogilvie-Grant for much kind assistance in identifying the skins. To Captain Blencowe my best thanks are due for his trouble in forming for me so representative a collection of the birds met with on his journey.

Nectarinia pulchella (Linn.).
♂. Raffile, 18. 2. 08.
♂. Wau, 31. 3. 08.
♂. Wau, 24. 4. 08.
♂. Raffile, 14. 2. 08.

Cinnyris cupreus (Shaw).
♂. Kojali, 22. 2. 08.

Chalcomitra acik (Antin.).
♂. Kojali, 20. 2. 08.
♂. „ 20. 2. 08.
♂. „ 20. 2. 08.
♂. Wau, 31. 3. 08.

Anthothreptes longuemarii (Less.).
♂. Kojali, 29. 2. 08.
♂. „ 28. 2. 08.
♀. Wau, 31. 3. 08.
♀. Kojali, 28. 2. 08.

Zosterops senegalensis Bp.
♂. Moyen, 4. 5. 08.
♀. „ 4. 5. 08.

Parus leucomelas Rüpp.
♂. Raffile, 13. 2. 08.
♀. „ 14. 2. 08.
♀. „ 8. 2. 08.

Motacilla vidua Sundev.
♂. Raffile, 12. 2. 08.
♂. „ 14. 2. 08.

Anthus gouldi Fraser.
♂. Kojali, 26. 2. 08.

Anthus trivialis Linn.
♂. Raffile, 12. 2. 08.
♂. Kojali, 20. 3. 08.

Macronyx croceus (Vieill.).
♂. Meshra-el-Rek, 12. 5. 08.
♀. „ 12. 5. 08.

Topotypes of Heuglin's *Macronyx striolatus*. The wing of the ♂ measures 104 mm., and that of the ♀ 100 mm.

Mirafra erythropygia (Strickl.).
♀. Wau, 22. 4. 08.

Heliocorys modesta Heugl.
♂ juv. West of Tonj, 16. 1. 08.
♂. West of Tonj, 16. 1. 08.
♀. Wau, 1. 4. 08.

Pyrrhulauda leucotis (Stanley).
♀. Wau, 3. 4. 08.
♂ juv. Wau, 26. 3. 08.

Emberiza affinis Würt.
♀. Raffile, 11. 2. 08.
♀. „ 14. 2. 08.
♂. „ 11. 2. 08.

Peironia dentata (Sundev.).
♂. Raffile, 12. 2. 08.
♂. Wau, 1. 4. 08.
♀. „ 31. 3. 08.
♀. Raffile, 6. 2. 08.
♀. „ 14. 2. 08.

Passer diffusus (Smith).
♂. Wau, 30. 3. 08.
♀. „ „
♂. „ „
♂. „ „
♀. „ „
♂. Near Wau, 18. 1. 08.

Passer emini (Hartl.).
♂. Meshra-el-Rek, 10. 5. 08.

Serinus icterus (Bonn. et Vieill.).
♂. Dug-Dug, 5. 5. 08.

Hypochera ultramarina (Gm.).
♀. Wau, 1. 4. 08.
♀. „ 1. 4. 08.
♂. Tawela, 18. 12. 07.

Coliopasser macrurus (Gm.).
♂. Raffile, 8. 2. 08.
♂. Kojali, 24. 2. 08.
♀. Raffile, 14. 2. 08.
♀. Kojali, 14. 3. 08.
♀. Raffile, 14. 2. 08.
♀. Kojali, 14. 3. 08.

Urobrachya phœnicea (Heugl.).
♂. Meshra, 10. 5. 08.
♂. „ 10. 5. 08.

Pyromelana franciscana (Isert).
♀. Wau, 30. 3. 08.
♂. „ 30. 3. 08.
♀. „ 31. 3. 08.
♀. „ 1. 4. 08.

SPERMESTES CUCULLATUS Swains.
♂. Tembura, 5. 3. 08.
♂. ,, ,,

ESTRILDA CINEREA Swains.
♀. Wau, 3. 4. 08.
♀. Moyen, 4. 5. 08.
♀. Wau, 30. 3. 08.

ESTRILDA PHŒNICOTIS Swains.
♂. Kojali, 13. 3. 08.
♂. Wau, 25. 4. 08.
♂. ,, 3. 4. 08.
♂. ,, ,,

LAGONOSTICTA BRUNNEICEPS Sharpe.
♀. Wau, 24. 4. 08.

PYTELIA CITERIOR Strickl.
♂. Wau, 3. 4. 08.
♀. ,, 24. 4. 08.

PYTELIA SOUDANENSIS (Sharpe).
♂. Shambe, 3. 1. 08.

PLOCEIPASSER SUPERCILIOSUS (Rüpp.).
♂. Raffile, 6. 2. 08.
♂. Wau, 1. 4. 08.

ANAPLECTES MELANOTIS (Lafr.).
♂. Raffile, 9. 2. 08.

HYPHANTURGUS OCULARIUS (Smith).
♂. Tembura, 5. 3. 08.

This bird belongs to the subspecies *Ploceus ocularius crocatus* of Reichenow (Vög. Afr. iii. p. 46).

Male in full plumage.

SITAGRA LUTEOLA (Licht.).
♂. Wau, 22. 4. 08.

In nearly full breeding-plumage.

HYPHANTORNIS HEUGLINI (Reichenb.).
♂. Kojali, 22. 2. 08.

In full breeding-plumage.

HYPHANTORNIS TÆNIOPTERUS (Reichenb.).

♂. Kojali, 20. 2. 08.

Out of plumage.

HYPHANTORNIS ABYSSINICUS (Gm.).

♂. Kojali, 29. 2. 08.

In non-breeding plumage.

ORIOLUS AURATUS Vieill.

♂. Raffile, 4. 2. 08.
♂. ,, ,,
♂. ,, 6. 2. 08.
♂. Kojali, 1. 3. 08.

PHOLIDAUGES LEUCOGASTER (Gm.).

Nine adult males, two immature males, and two females. Wau, between 30. 3. 08 and 25. 4. 08.

In 1907, when I was collecting in the same locality, I did not see a single specimen of this lovely Starling.

LAMPROTORNIS CAUDATUS (P. L. S. Müll.).

♀. Kojali, 22. 4. 08.

LAMPROTORNIS PORPHYROPTERUS Rüpp.

♂. Tawela (on the Nile), 18. 12. 07.

LAMPROTORNIS ÆNEOCEPHALUS Heugl. ?

♀. Raffile, 2. 2. 08.

LAMPROCOLIUS CHALYBÆUS (Ehr.).

♂. Tembura, 5. 3. 08.
♂. ,, 6. 3. 08.
♂. Wau, 24. 5. 08.
♀. ,, 30. 3. 08.
♀. Tembura, 5. 3. 08.
♀. Tawela, 8. 12. 07.

CORVUS SCAPULATUS Daud.

♀. Wau, 2. 4. 08.

CRYPTORHINA AFRA (Linn.).

♂. Wau, 30. 3. 08.
♂. Doleiba, 5. 5. 08.

Dicrurus afer (Licht.).
♀. Tembura, 4. 3. 08.
♂. W. of Tonj River, 15. 1. 08.

Prionops poliocephalus (Stanl.).
♀. W. of Rumbek, 10. 1. 08.

Campophaga phœnicea (Lath.).
♂. Wau, 24. 4. 08.
♂. ,, ,,

Graucalus pectoralis Jard. & Selby.
♂. Raffile, 8. 2. 08.
♀. Wau, 22. 4. 08.

Corvinella corvina (Shaw).
♀. Wau, 30. 3. 08.
♂. ,, ,,
♂. Ukanda, 28. 1. 08.

Fiscus excubitorius (Des Murs).
♂. Atwot, 7. 1. 08.
♂. E. of Rumbek, 8. 1. 08.
♀. Doleiba, 5. 5. 08.
♂. ,, ,,
♂. ,, ,,

Lanius paradoxus Brehm.
♂. Raffile, 6. 2. 08.
♀. ,, ,,
♀. ,, 14. 2. 08.
♂ juv. ,, 16. 2. 08.

Lanius nubicus Licht.
♂. Hillet Abbas (White Nile), 20. 12. 07.
♀. S. of. Renk (White Nile), 21. 12. 07.

Nilaus afer (Lath.).
♂. Wau, 20. 4. 08.
♂. ,, ,,

Laniarius æthiopicus (Gm.).
♂. Raffile, 2. 2. 08.
♂. ,, ,,
♀. ,, ,,

LANIARIUS CATHAROXANTHUS (Neum.).
♂. Tembura, 6. 3. 08.
♂. W. of Rumbek, 10. 1. 08.

LANIARIUS SULPHUREIPECTUS (Less.).
♂. Kojali, 29. 2. 08.
♂. Raffile, 2. 2. 08.
♀. Tembura, 5. 3. 08.
♀. Kojali, 29. 2. 08.
♀. Wau, 30. 3. 08.

LANIARIUS ERYTHROGASTER Cretzschm.
♂. Wau, 30. 3. 08.
♀. " "
♀. Atwot, 7. 1. 08.

DRYOSCOPUS MALZACII (Heugl.).
♂. Ukanda, 28. 1. 08.
♂. Kojali, 21. 3. 08.
♂ juv. Tembura, 3. 3. 08.
♀. Ukanda, 28. 1. 08.

TELEPHONUS SENEGALUS (Linn.).
♂. Tembura, 4. 3. 08.

TELEPHONUS BLANFORDI (Sharpe).
♂. Shambe (Upper Nile), 28. 12. 07.

CRATEROPUS PLEBEIUS (Rüpp.).
♂. Ukanda, 28. 1. 08.
♀. " "
♂. Wau, 22. 4. 08.

PYCNONOTUS MINOR Heugl.
♂. Doleiba, 5. 5. 08.
♀. Kojali, 25. 2. 08.
♂. W. of Tonj, 16. 1. 08.

CRINIGER FLAVIGULA (Cab.).
♂. Tembura, March 1908.

EREMOMELA ELEGANS (Heugl.).
♂. Wau, 31. 3. 08.

CAMAROPTERA BREVICAUDATA (Rüpp.).
♂. Wau, 1. 4. 08.
♀. „ 24. 4. 08.

SYLVIELLA BRACHYURA Lafr.
♀. Wau, 24. 4. 08.

ORTHOTOMUS ERYTHROPTERUS (Jard.).
♂. Wau, 31. 3. 08.

PRINIA MURINA (Heugl.).
♀. Renk (White Nile), 21. 12. 07.

PRINIA MYSTACEA Rüpp.
♀. Wau, 24. 4. 08.

CISTICOLA STRANGII (Fraser).
♀. Doleiba, 4. 5. 08.

CISTICOLA MARGINALIS (Heugl.).
♂. Wau, 24. 4. 08.

CISTICOLA RUFICEPS (Rüpp.).
♂. Moyen, 4. 5. 08.

CISTICOLA FERRUGINEA Heugl.
♂. Wau, 22. 4. 08.

MELOCICHLA MENTALIS (Fraser).
♀. Tembura, 4. 3. 08.

HYPOLAIS PALLIDA (Hempr. & Ehr.).
♂. Kojali, 23. 2. 08.

COSSYPHA HEUGLINI Hartl.
♂. West of Rumbek, 10. 1. 08.
♂. Shambe, 1. 1. 08.

RUTICILLA PHŒNICURUS (Linn.).
♂. Wau, 14. 1. 08.
♂. „ 1. 4. 08.
♂. Raffile, 18. 2. 08.
♂. Tembura, 5. 2. 08.

TURDUS PELIOS Bp.
♂. Wau, 30. 3. 08.
♂. „ 23. 4. 08.

MONTICOLA SAXATILIS (Linn.).
♂. North of Kojali, 20. 2. 08.
♂. Tembura, 4. 3. 08.

SAXICOLA ŒNANTHE (Linn.).
♂. Raffile, 13. 2. 08.
♀. Wau, 1. 4. 08.
♂. ,, ,,

SAXICOLA MELANOLEUCA (Güld.).
♂. Hillet Abbas (White Nile), 20. 12. 07.
The Éastern race, *S. melanoleuca melanoleuca.*

SAXICOLA ISABELLINA Cretzschm.
♂. Wau, 18. 1. 08.

MELANORNIS EDOLIOIDES (Swains.).
♀. Raffile, 2. 2. 08.

BRADYORNIS PALLIDUS (v. Müll.).
♂. Wau, 22. 4. 08.
♂. ,, 30. 3. 08.
♀. ,, 31. 3. 08.
♂. ,, 29. 1. 08.

MUSCICAPA AQUATICA Heugl.
♂. Kojali, 22. 2. 08.

PLATYSTIRA CYANEA (P. L. S. Müll.).
♀. Tembura, 5. 3. 08.

BATIS ORIENTALIS Heugl.
♂. Raffile, 11. 2. 08.
♂. ,, 14. 2. 08.
♀. Wau, 31. 3. 08.
♀. Tonj, 14. 1. 08.

ELMINIA TERESITA Antin.
♂. Tembura, 3. 3. 08.
♂. ,, 5. 3. 08.

TERPSIPHONE CRISTATA (Gm.).
♂. Shambe, 3. 1. 08.
♂. Wau, 20. 4. 08.

♀. Wau, 20. 4. 08.
♀. „ „
♀. „ 3. 4. 08.
♂. Tembura, 5. 3. 08.
♂. „ „
♂. „ 4. 3. 08.
♀. „ 5. 3. 08.
♂. „ 3. 3. 08.
♀. Kojali, 29. 2. 08.

A good series shewing all stages of plumage.

EMPIDORNIS SEMIPARTITUS (Rüpp.).
♀. Gardein, 3. 5. 08.
♂. Gameiza, 4. 1. 08.
♀. „ „

COTILE MINOR, Cab.
♀. Raffile, 18. 2. 08.
♀. „ 19. 2. 08.

HIRUNDO ÆTHIOPICA Blanf.
♀. Meshra, 10. 5. 08.
♀. „ „

MACRODIPTERYX LONGIPENNIS Shaw.
♂. Tonj, 14. 1. 08.
♂. Raffile, 23. 3. 08.
♂. Wau, 24. 4. 08.

SCOTORNIS CLIMACURUS (Vieill.).
♂. Wau, 24. 4. 08.
♂. „ 28. 4. 08.
♀. „ 25. 4. 08.
♀. Hillet Abbas (White Nile), 18. 12. 07.

CORACIAS ABYSSINICUS Bodd.
♂. Wau, 28. 3. 08.
♂. Tembura, 3. 3. 08.
♀. „ „
♀. W. of Tonj, 17. 1. 08.
♀. „ 16. 1. 08.

DICROCERCUS FURCATUS (Stanl.).
♀. S. of Kojali, 1. 3. 08.

MEROPS PUSILLUS P. L. S. Müll.
♂. Gardein, 3. 5. 08.
♂. „ „
♀. „ „
♀. „ „

MEROPS FRENATUS (Hartl.).
♂. Raffile, 18. 2. 08.
♀. Kojali, 20. 2. 08.
♀. Wau, 30. 3. 08.
♀. „ „

MEROPS VIRIDIS Linn.
♂. S. of Renk (White Nile), 21. 12. 07.

MEROPS NUBICUS Gm.
♀. Raffile, 4. 2. 08.
♂. „ „
♂. W. of Tonj River, 16. 1. 08.
♂. Kojali, 1. 3. 08.
♀. Tembura, 4. 3. 08.
♀. „ 5. 3. 08.
♂. „ 3. 3. 08.

UPUPA EPOPS Linn.
♂. S. of Raffile, 18. 2. 08.
A very small specimen: culmen 37 mm.; wing 130 mm.

IRRISOR ERYTHRORHYNCHUS (Lath.).
♂. Wau, 20. 4. 08.
♂. „ „

SCOPTELUS ATERRIMUS (Steph.).
♂. W. of Tonj, 16. 1. 08.
♀. Near Raffile, 1. 2. 08.

LOPHOCEROS NASUTUS (Linn.).
♂. Raffile, 22. 3. 08.
♀. Wau, 24. 4. 08.

LOPHOCEROS ERYTHRORHYNCHUS (Temm.).
♀. Wau, 24. 4. 08.

CERYLE RUDIS (Linn.).
♀. Raffile, 14. 2. 08.

CORYTHORNIS CYANOSTIGMA (Rüpp.).
♂. Raffile, 6. 2. 08.
♀. ,, 18. 2. 08.
♂. Wau, 24. 4. 08.

ISPIDINA PICTA (Bodd.).
♂. Tembura, 4. 3. 08.
♀. ,, ,,
♂. Wau, 24. 4. 08.
♀. ,, ,,

HALCYON SEMICÆRULEUS Forskål.
♂. Raffile, 6. 2. 08.
♀. ,, 20. 3. 08.
♂. ,, 18. 2. 08.
♀. ,, 6. 2. 08.
♂. Tembura, 1. 3. 08.
♀. Kojali, 23. 2. 08.

HALCYON CHELICUTENSIS (Stanl.).
♂. (Label lost.)

HALCYON MALIMBICUS Shaw.
♂. Tembura, 8. 3. 08.

COLIUS LEUCOTIS Rüpp.
♂. Kojali, 22. 2. 08.
♀. ,, 23. 3. 08.

TURACUS LEUCOLOPHUS Heugl.
♂. Tembura, 10. 3. 08.
♂. ,, ,,
♂. ,, ,,
♀. ,, ,,
♂. ,, ,,
♀. ,, 1. 3. 08.

♂. Kojali, 23. 2. 08.
♂. ,, 24. 2. 08.
♂. S. of Kojali, 1. 3. 08.

Schizorhis zonura Rüpp.
♂. Tembura, 3. 08.
♀. ,, 4. 3. 08.
♂. ,, ,,
♂. ,, ,,
♂. W. of Tonj River, 17. 1. 08.

Centropus monachus Rüpp.
♀. E. of Rumbek, 8. 1. 08.

The head is glossed with green and not purple. There is a precisely similar specimen in the British Museum labelled "Baroma, Abyssinia; Lord Lovat."

Coccystes glandarius (Linn.).
♂. Madal, 5. 5. 08.
♀. ,, ,,
♂. W. of Rumbek, 11. 1. 08.

Coccystes cafer (Licht.).
♂. Tembura, 3. 3. 08.
♀. ,, ,,

Chrysococcyx cupreus (Bodd.).
♂. Meshra-el-Rek, 10. 5. 08.

Indicator sparrmani Steph.
♂. Kojali, 1. 3. 08.

Indicator minor Steph.
♂. Shambe, 28. 12. 07.

Erythrobucco rolleti (De Filippi).
♂. Kojali, 1. 3. 08.
♂. ,, 23. 2. 08.
♂. Wau, 24. 4. 08.
? (Label missing.)

Lybius leucocephalus (De Filippi).
♂. Doleiba, 5. 5. 08.
♂. ,, ,,

LYBIUS ABYSSINICUS (Lath.).
♂. Ardebba, 5. 1. 08.

LYBIUS VIEILLOTI Leach.
♂. Raffile, 14. 2. 08.
♀. Wau, 24. 4. 08.
♂. Raffile, 22. 3. 08.
♂. ,, 3. 2. 08.

BARBATULA CHRYSOCOMA (Temm.).
♂. Meshra, 10. 5. 08.

MESOPICUS PŒOCEPHALUS (Swains.).
♂. Wau, 24. 4. 08.

VINAGO CALVA (Temm. & Knip).
♂. Madal, 5. 5. 08.
♂. ,, ,,
♀. ,, ,,
♀. Rumbek, 9. 1. 08.
♀. ,, ,,

COLUMBA GUINEA Linn.
♂. Dug-Dug, 5. 5. 08.

TURTUR DECIPIENS Finsch & Hartl.
♂. Wau, 24. 4. 08.

TURTUR VINACEUS (Gm.).
♂. Wau, 1. 4. 08.

This Dove is Antinori's *Turtur vinaceus barbarus.* I find that in my paper in the 'Ibis,' 1908, p. 249, I erroneously entered it as *T. roseigriseus* (Sundev.).

TURTUR SENEGALENSIS (Linn.).
♀. Tembura, 4. 3. 08.

CHALCOPELIA AFRA (Linn.).
♂. Wau, 24. 4. 08.

PŒOCEPHALUS MEYERI (Rüpp.).
♂. Wau, 22. 4. 08.
♀. ,, ,,

Palæornis docilis Vieill.
♂. Amien's, 5. 5. 08.
♀. „ 4. 5. 08.
♀. „ 8. 5. 08.
♂. Wau, 22. 4. 08.

Glaucidium perlatum (Vieill.).
♂. Wau, 24. 4. 08.

Bubo cinerascens Guér.
♂. Kojali, 20. 3. 08.

Falco ruficollis Swains.
♂. Wau, 30. 3. 08.

Cerchneis ardesiacus (Bonn. et Vieill.).
♂. Tonj, 14. 1. 08.

Butastur rufipennis (Sundev.).
♀. Amien's, 8. 5. 08.

Melierax polyzonus (Rüpp.).
♀. Wau, 2. 4. 08.

Melierax gabar (Daud.).
♂. Goz Abu Guma (White Nile), 28. 5. 08.
♀. Bringi's (S. of Wau), 26. 1. 08.

Astur sphenurus Rüpp.
♂. Wau, 24. 4. 08.
♀. „ „

Hagedashia hagedash (Lath.).
♀. Raffile, 16. 2. 08.

Herodias ralloides (Scop.).
♂. Wau, 2. 4. 08.

Scopus umbretta Gm.
♀. Raffile, 14. 2. 08.
♀. „ 17. 2. 08.

Francolinus icterorhynchus Heugl.
♂. Raffile, 4. 2. 08.
♀. Tembura, 4. 3. 08.

♀. Wau, 1. 4. 08.
♀. „ „
♀. „ „

PTILOPACHYS FUSCUS (Vieill.).
♂. Raffile, 10. 2. 08.
♀. Kojali, 20. 2. 08.

PTEROCLES QUADRICINCTUS Temm.
♀. Raffile, 18. 2. 08.

SARCIOPHORUS TECTUS (Bodd.).
♂. Tawela, 18. 12. 07.

XIPHIDIOPTERUS ALBICEPS (Gould).
♀. Kojali, 1. 3. 08.
♀. „ 22. 2. 08.

HOPLOPTERUS SPINOSUS (Linn.).
♀. Shambe, 29. 12. 07.

TRINGOIDES HYPOLEUCUS (Linn.).
♂. Shambe, 29. 12. 07.

ŒDICNEMUS SENEGALENSIS Swains.
♀. Raffile, 17. 2. 08.

ŒDICNEMUS AFFINIS Rüpp.
♀. Wau, 24. 4. 08.

III.—*On the Birds of Kohat and Kurram, Northern India.* By Lieut. C. H. T. WHITEHEAD, Indian Army. *With an Introduction by* Major H. A. F. MAGRATH, Indian Army.

(Plate III. and Text-figures 4 & 5.)

I.—INTRODUCTION.

By Major H. A. F. MAGRATH.

CONTRASTED with a district of the Punjab, which I had just left, the variety of the surrounding bird-life was one of the first impressions received on my arrival at Kohat in

December 1904, and it struck me that, as I was likely to be quartered there for some time, a List of the birds of the district might be usefully attempted. I had already made notes on a few of the commoner species, when I had the good fortune to discover in Mr. C. H. T. Whitehead, 56th Rifles, who had just rejoined his regiment at Kohat, a keen naturalist, anxious to start work at once on the ornithology of the district. We at once agreed to work together, and in spite of military duties which permitted of little leisure for the pursuit of hobbies, we had, by the end of February 1906, acquired at first hand a fair working knowledge of the local avifauna. In March 1906 my regiment moved to the Samana, a ridge 6500 feet above sea-level and 30 miles due west of Kohat Station. This ridge forms the northern boundary of the Miranzai Valley, and overlooks on the north the Khanki Valley and Tirah, the land of the Afridis. Here a few interesting additions were made to our list—such as *Pica rustica*, *Accentor rufilatus*, *Accentor himalayanus*, *Fringillauda sordida*, and *Suya crinigera*. Meanwhile, Whitehead was doing good work below, and during the manœuvres secured, among other birds, an example of *Fringilla cœlebs*, a species new to India. In the end of April 1906 I proceeded home on furlough and, as the sequel will shew, the production of the List was then left entirely in Whitehead's hands. An interesting discovery made by him shortly after my departure was a nesting colony of *Aëdon familiaris* in the vicinity of the station. Taking two months' leave in June 1906, he paid a visit to the Kurram Valley lying to the N.W. of Kohat, and followed to their breeding-grounds at the head of the valley many of the birds that winter in the plains around Kohat. During these two months he explored the Safed Koh Range very thoroughly, considering the short time at his disposal, ascending the two peaks of Sikaram (15,600 ft.) and Bodin (14,000 ft.), and by dint of real hard work, aided by much enthusiasm, added a great deal to our knowledge of the distribution and nesting-habits of many Oriental and Palæarctic species, discovering for the first time the nests and getting the eggs of *Saxicola capistrata* and *Phylloscopus subviridis*, besides obtaining some interesting mammals. His most important discovery, however, was a new race of *Anorthura* procured at 10,000 feet on the Safed Koh. To this bird he has very generously done me the honour of giving my name, an honour quite undeserved, which has made me insist on the trivial name of "Whitehead's Wren" for that species.

With the kind assistance of Dr. Bowdler Sharpe and Mr. Charles Chubb I was enabled to work out, at the British Museum, the skins procured by Whitehead on this trip, in addition to those previously collected in Kohat.

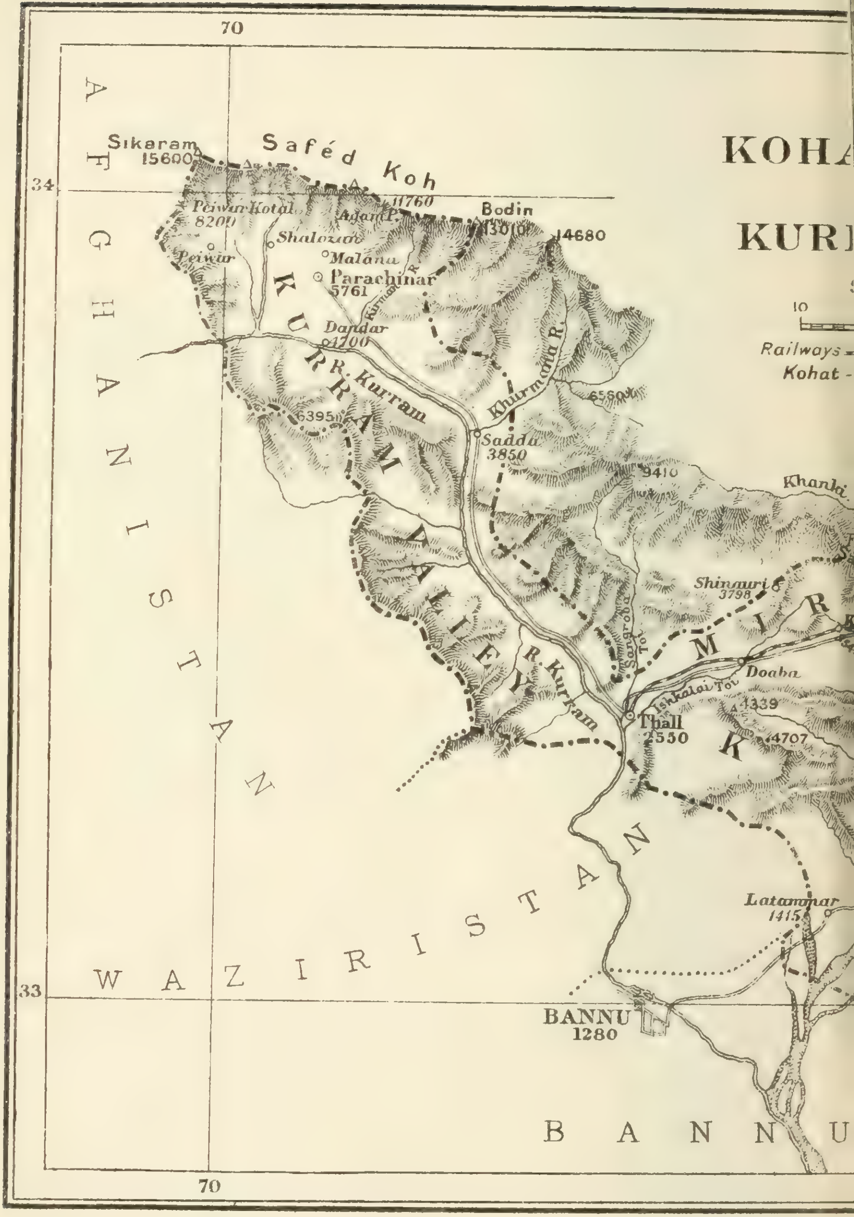
During my absence on leave my regiment had marched in course of relief to Bannu, the district which borders the Kohat District to the south. My official connexion with Kohat was therefore, much to my regret (especially as I could no longer pursue my ornithological studies there), severed. Passing through Kohat Station on my return from leave, Whitehead met me with the interesting news that he had a few days previously shot a Waxwing (*Ampelis garrulus*), another new bird for India.

In April 1907, availing myself of three months' privilege-leave and Whitehead at the same time obtaining a year's furlough, we decided to take a trip together to the Kurram Valley before he went home, in order to add, if possible, to the knowledge gained in the previous year. We met at Thall on the 15th of April and there awaited the sanction of the Political Agent of the Kurram Valley to our proposed expedition in the territory under his administration. The number of the smaller Passerine birds migrating up the valley at the time was very great, and we had plenty to interest us in this unusual leave-resort. The officer commanding the Post, Lieut. Wolley, with his wonted hospitality, invited us to consider ourselves honorary members of his little mess, which privilege we were only too glad to avail ourselves of. In due course the Political Officer's permit arrived, but it was so hampered by restrictions that we had to abandon our original intention of working slowly up the valley and proceed direct to Parachinar, the headquarters of the Agency, which is situated about 13 miles from the head of the valley. Here the officers of the Kurram Militia very kindly allowed us to make use of their exceedingly comfortable mess, and most hospitably entertained us during our stay. After obtaining permission to move up to Peiwar, 10 miles further up the valley, we left Parachinar on the 21st of April. The Political Agent was so solicitous for our safety that he insisted on our taking an armed tribal escort of six men with us. We did not require their military assistance, but found them useful to look for nests, climb trees, and carry our guns and lunch-baskets. Making the little rest-house at Peiwar our headquarters, we daily explored the surrounding Ilex jungle and visited several times the pine-clad hills on the Afghan border. In an Ilex, Whitehead was fortunate in coming across a nest, with eggs, of *Ægithaliscus leucogenys*. This bird is an early breeder, and six other nests that we found contained young. We had not been at Peiwar many days when rumours reached us from Parachinar that the Turis (the tribe inhabiting the Valley), who had been listening to wondrous tales of the spread of plague in Peshawar, poured into their ears by Kabuli traders and others passing up the valley from India to Afghanistan, had become highly suspicious of our movements and credited us with all sorts of nefarious deeds. We were supposed to be agents of the Government sent up to poison their water-supply and to spread the plague. We were said to stalk abroad at night catching and inoculating rats, in order to disseminate the pestilence. Colour was lent to this ingenuous theory by the fact that we had trapped a few Mole-rats, Gerbilles, and Dormice. Curiously enough we could see no signs of hostility in the villagers themselves, in fact we found them invariably friendly, and our tribal escort seemed to know nothing of these rumours. We were now anxious to shift camp and to move up the slopes of Sikaram, as the snow, under the influence of the summer sun, was gradually receding. But, in face of the rumours related above, the Political Agent did not think it advisable for us to do so, and even considered that our presence at Peiwar might lead to some act of violence towards us, and be the cause of administrative complications in the valley. We were, therefore, asked to return to Parachinar, where a meeting was called of the leading Maliks, on the result of which our fate with respect to being allowed to continue collecting would depend. Unfortunately and much to our chagrin the verdict of the "Jirga" was against us, and the Political Agent called on us and informed us that, owing to the popular excitement, it would be quite unsafe for us to go into camp again and that we could only work in the immediate vicinity of Parachinar. Our expedition thus came to an untimely end, and, as there was nothing more to be done in the bird-line at Parachinar, we returned to Thall, whence a few days later Whitehead took his departure for England, and I to places where ignorance and superstition would cease from troubling.

Text-fig. 4.

Fort Lockhart, in winter.

I may mention that soon after we arrived in Parachinar from Peiwar news was brought in by a native officer of the


KOHA
KURI
10
Railways
Kohat
70
34
33
AFGHANISTAN
WAZIRISTAN
BANNU
Sikaram 15600
Saféd Koh
11760
Bodin 13010
14680
Peiwar Kotal 8200
Peiwar
Agam P.
Shalozan
Malana
Parachinar 5761
Dandar 4700
KURRAM VALLEY
R. Kurram
Kurram R.
Khurmana R.
6560
Sadda 3850
6395
9410
Khanki
Shinauri 3798
Sangroba Toi
Ishkalai Toi
Doaba
MIR
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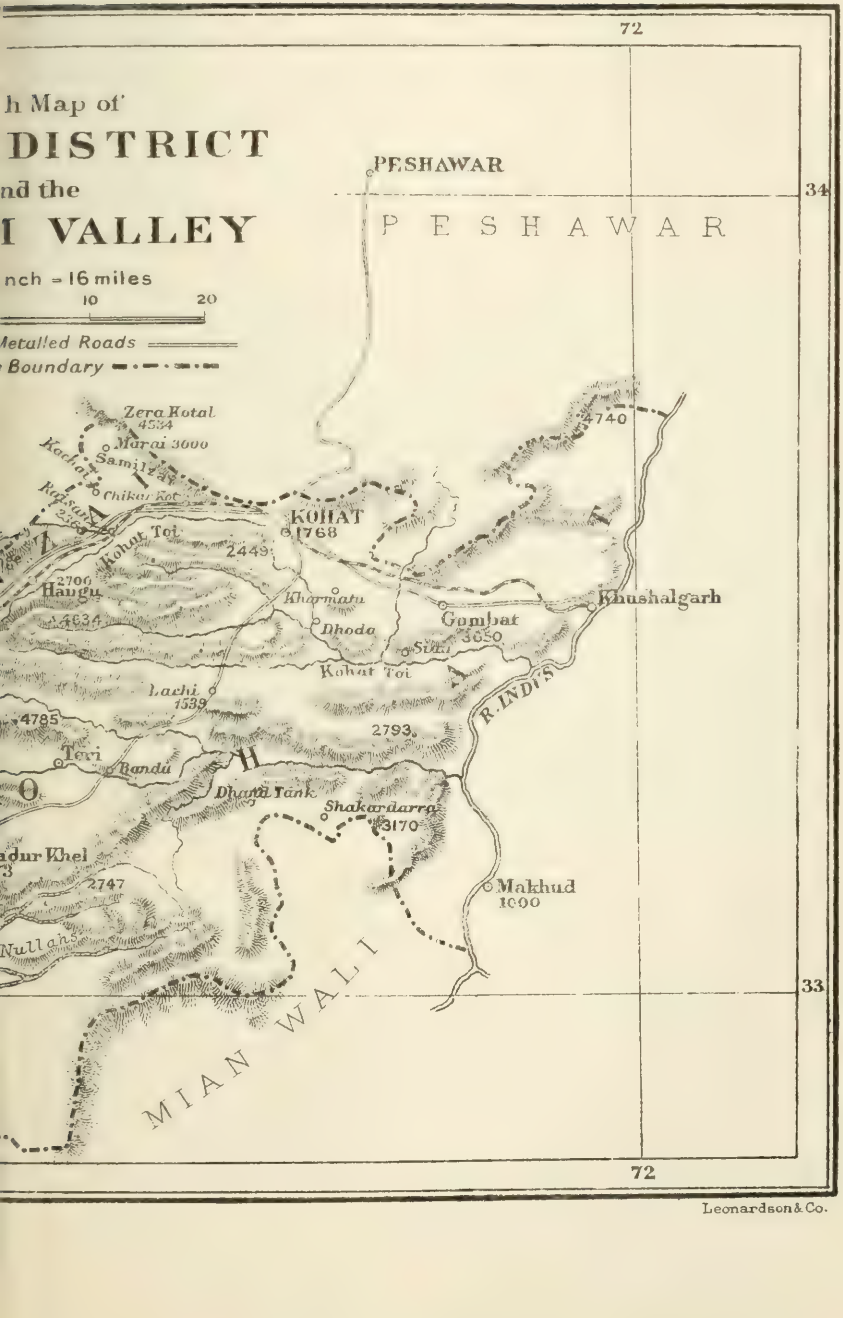
4339
4707
Thall 2550
Latammar 1415
BANNU 1280


h Map of
DISTRICT
nd the
I VALLEY
nch = 16 miles
10
20
Metalled Roads
Boundary
72
34
33
PESHAWAR
P E S H A W A R
Zera Kotal 4534
Marai 3000
Samilzai
Chikar Kot
Kohat
Raisan 2264
Kohat Toi
2449
KOHAT 1768
4740
2700
Hangu
4634
Kharmatu
Dhoda
Gombat 3050
Sutri
Khushalgarh
Kohat Toi
Lachi 1539
R. INDUS
4785
2793
Teri
Banda
Dhand Tank
Shakardarra
3170
adur Khel
2747
Nullahs
Makhud 1000
MIAN WALI

Leonardson & Co.

local militia, who had been on leave to his village, that we had left Peiwar just in time. Had we remained another night, we were, like the Babes in the Wood, to have been foully murdered. All arrangements had been made, assassins hired, and our pleasant little camp was to have been converted into a shambles! This was a most amusing yarn which tickled us immensely! Gladly would we have accepted these small risks if only we had been allowed to continue our expedition.

Text-fig. 5.

Zeran Nullah, Safed Koh, from 8000 ft. alt.

A glance at the accompanying map (Plate III.) will give a good idea of the geography of this portion of the N.W. Frontier of India. Situated between the 32nd and 35th parallels of latitude and the 69th and 72nd meridians of longitude it is in shape somewhat like a pipe, the District of Kohat forming the bowl and the Kurram Valley the stem and mouthpiece. Its northern boundary, proceeding from east to west, consists of the bare and rocky hills lying between it and the Peshawar District, the Samana Range (barren hills inhabited by independent Orakzai and Afridi tribes) and the Safed-Koh Range. This rugged barrier of hills is on the east as low as 3000 feet above sea-level, but gradually increases in height westward till it culminates in the imposing snow-clad ramparts of the Safed-Koh Range, the highest peak of which, Sikaram (15,600 feet), lies at its western extremity. To the west it is bounded by Afghanistan and Waziristan, to the south by the districts of Bannu and Mianwali, and to the east by the R. Indus.

The general aspect of Kohat is a confused mass of low bare rocky hills, nullahs, and ravines, intersected by two main depressions running parallel and with a general trend from west to east. These depressions are formed, in the first case, by the Miranzai and Kohat Valleys running in prolongation of each other, and in the second by the Teri Valley. Two alluvial plains are also noticeable, namely that around and east of Kohat Station, and the oasis of Lachi. The Kurram is a long valley, averaging some 2 miles in width at its lower end and broadening into a stony plain 8 or 10 miles wide at its upper extremity and rising in the 70 miles from Thall 4000 feet. Down its centre rushes, over a bed of stones and boulders, the river that gives its name to the valley, which rises in Afghanistan some 20 miles beyond the valley-head. Consisting, as the district does, for the most part of desert, the flora, compared with that of the Himalayas, is not luxurious. Coarse grass, Olives, thorn-scrub, and Dwarf Palms sparsely cover the hills, and in parts of the Miranzai Valley and around Thall the two latter form thick scrub-jungle. Ilex-Oaks, where their branches are not ruthlessly lopped and the trees are permitted to grow, attain a considerable size on the Samana, and here and there on this hill some fine Ash-trees flourish. In the Safed Koh Range, however, forests of Fir, Pine, and Cedar clothe the mountain-sides from about 8000 to 12,000 feet, and cover the top of the spur over which the Peiwar Pass runs. Below, these forests are gradually replaced by Ilex trees, which again, as one descends to the low foot-hills, are replaced by dense Ilex-scrub.

Where water is easily brought on to the land, as is the case in the plains around Kohat and Lachi and in the Kurram, Hangu, and Teri Valleys, green oases of cultivation relieve the general barrenness. A feature of the cultivation around Kohat and in the Miranzai Valley consists of the beautiful orchards of Mulberry, Peach, Plum, Fig, and Vine which abound, and are supplemented, in the stonier parts, by groves of wild Olive-trees. The crops consist mainly of wheat; but Indian corn, barley, millet, cotton, and sugar-cane are also grown, and around Bangu, Thall, and in the Kurram Valley, rice. Immediately south of the station of Kohat the Government grass-farm, of about 300 acres, possesses many attractions for birds on migration, and, after irrigation, is not a bad place to observe Waders: even Duck and Snipe have been shot on it. The climate is very dry. As regards temperature: in the plains of Kohat the winter might be compared to that of the south of France, but the summer is decidedly hotter and probably most nearly approximates to that of Egypt. In the Kurram Valley temperatures are much lower, and the climate of Upper Kurram must be somewhat similar, both in summer and in winter, to that of Northern Germany.

Ornithologically speaking, this corner of the Palæarctic Region * has hitherto been little worked. With the exception

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* Dresser in the preface to his 'Manual of Palæarctic Birds' does not clearly define the Palæarctic boundary in this locality, and by omitting all reference to the plains of India would seem to imply that Kohat belongs to the Indian Subregion. On the other hand, Blanford in his 'Distribution of Vertebrate Animals in India' assigns the plains of the Punjab to the Palæarctic Region. Professor Newton, however, in his article on "Birds" in the 'Encyclopædia Britannica,' remarks that if Baluchistan is to be excluded from the Palæarctic Region, "then the line of demarcation must run inland and so continue between that land and Afghanistan *till* ascending the right bank of the Indus it turns the shoulder of the Great Snowy range." The italics are mine, and I take this to mean that the line of demarcation strikes the Indus at a point in prolongation eastward of the boundary-line between Afghanistan and Baluchistan, *i. e.* somewhere in the vicinity of Dera Ghazi Khan. If this is the correct interpretation of Newton's views then the ornithology of N.W. India strongly supports them.

of the two papers by Colonel R. H. Rattray published in the 'Journal' of the Bombay Natural History Society, "Notes on Nests taken from March to June at Kohat and Mussoorie, North-Western Provinces" (vol. x. p. 628), and "Birds Collected and Observed at Thall" (vol. xii. p. 337), and a few observations by Major Wardlaw-Ramsay and others mentioned in the 'Fauna of British India,' I know of no contribution to its ornithology *. Neither Hume nor Jerdon, Oates nor Blanford, nor others of India's many excellent ornithologists, appear to have visited it. And yet it is an important locality, lying as it does in the extreme north-west of the Peninsula on one of the great migration-highways into India, and at a point on that highway where it converges to its narrowest limits. The pre-eminently Palæarctic character of the avifauna is most striking. Especially is this noticeable in the forms breeding in the Upper Kurram, very few of the many subtropical species inhabiting the Western Himalayas being found there. From the description of the country and from its geographical position the predominance of such groups as the Accipitrines, Motacillidæ, Fringillinæ, Emberizinæ, and of the desert-forms will not be considered surprising. Although undoubtedly well represented on migration, the Ducks, Waders, and Shore-birds are difficult of observation in Kohat. With the exception of the grass-farm, the tank at Dhand-Idl-Khel, and some marshy tracts round Thall and Lachi, this District is singularly devoid of the moist places beloved of Wild-fowl and Waders, no streams of any size flowing through it. Matters improve in this respect on arriving at the Kurram Valley. The river here being taken off for rice-cultivation in places along its banks, marshy spots have formed, and in the months of March and April, September and October, numbers of Wild-fowl and Waders, using this

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* There is only one allusion to Kohat itself in the 'Fauna of British India,' and that is in connection with the occurrence there of the Red-wing (*Turdus iliacus*), recorded by Jerdon on hearsay from Blyth, on hearsay from Trotter. After more than two years' careful observation we failed to come across this bird, and I think we may safely say that it is not "a regular winter visitant," if it occurs at all.

river-route on migration, are induced to halt on their way, affording good sport to "Sahibs" and Turi villagers. The importance of this river as a migration-route is illustrated lower down, where it debouches into the sandy plains of Bannu, outside of the area which we are now considering. Here vast quantities of Wild-fowl, Waders, and Gulls, on migration to their far-off northern homes from the lower reaches of the Indus and the Manchar Lake in Sind, are to be observed, in the months of February and March, asleep or preening their feathers on the mudbanks in mid-river. The majority of these birds undoubtedly keep to the river-route, there being no other important water-way lying near their line of migration, and must therefore, of necessity, pass up the Kurram Valley. It may be wondered at that the River Indus, bordering Kohat, has not been mentioned as suited to the observation of Water-fowl. But in this portion of its course that great river is confined between hills, and flows over a rocky bed, consequently here it affords no feeding-grounds or resting-places for such birds. Whitehead came down it in a boat at a time of year when he might have expected to find birds, but his journey proved disappointing. On the whole, then, Kohat and Kurram must be looked on as a profitable locality to the Indian ornithologist.

The straggling of Western Palæarctic forms, not as yet recorded within Indian limits, into this area is probably of commoner occurrence than might be supposed, and, were it possible for a winter to be spent in collecting in the Upper Kurram, yet new species to the Indian list would doubtless be forthcoming. The task we set ourselves in our late trip, so unfortunately interrupted, still remains to be done, and most assuredly new breeding species to India await the discoverer.

It was at first intended to publish two separate papers, one on the birds of Kohat and another on those of the Kurram Valley, but Mr. Whitehead has decided, wisely as I think, to combine them. The two localities are contiguous, and the latter is, as I mentioned before, the breeding-ground of many species that winter in the plains. Of the total number of 336 species which the list contains, 317 were found in Kohat, the remaining 19 were met with only in the Kurram Valley. Considered together, therefore, the single paper will be found to be of greater scientific value than if the two districts had been separately treated, and Mr. Whitehead deserves much credit for the excellent piece of work which he has accomplished.

II.—PREFACE.

By C. H. T. WHITEHEAD.

Major Magrath does not take any credit for his own work. Before I even started he had made a fair list of the birds of Kohat, and it was his enthusiasm that infected me. All that I have done is to somewhat amplify this list and add a little to the notes. The paper should have been written by him, but he insisted on my doing so, and has now most kindly gone carefully through it, making many necessary corrections and alterations and entirely rewriting the account of the Bulbuls of the genus *Molpastes*, the hybrid forms of which he was first to observe in Kohat.

Much interesting information was kindly contributed by Mr. D. Donald, C.I.E., the Political Officer and Commandant of the Border Military Police and Samana Rifles, which his long residence in Kohat (some 18 years), his frequent tours in the district, the interest he takes in birds generally, and in the Accipitrines in particular, and his great reputation as a falconer, render of especial value.

Specimens of most of the Passerine and of a large number of the remaining birds included in this paper were shot and carefully compared with Oates and Blanford's excellent descriptions, measurements and points of difference, if any, being always recorded, but only in the case of their not corresponding or of their being of special interest were skins made, for time did not permit of more. These skins are now in the British Museum and are those referred to in the paper. Amongst them will be found melanistic varieties of several species (*Lanius lahtora*, *Passer domesticus*, *Anthus similis*, *A. spipoletta*), which, except in the case of the Shrike, were shot out of flocks of similarly coloured birds. Taken as a whole, however, the birds of the District are characterized by their pale colouring, which is what one would expect from the desert nature of the country.

Many more birds appear to halt in Kohat in the spring migration, which continues from February till well into June, than in the autumn. This is probably due to the configuration of the locality. As will be seen from the map (Plate III.), the main Kohat Valley at its junction with the Indus is comparatively broad but narrows considerably towards the Kurram River, with which it is connected by the Ishkalai, an insignificant stream flowing in at Thall. The latter stream is probably easily missed by the hosts of migrants passing down the Kurram River on southward migration in autumn. Major Magrath writes that they migrate down this river in the Bannu District in great numbers in August, September, and the first half of October.

In square brackets are added notes on those species met with by Major Magrath in Bannu, but not found by us in Kohat or in the Kurram Valley, as most of them would be likely to occur within our limits. The Bannu District, however, exhibits a great contrast to Kohat, consisting as it does for the most part of a broad, well-watered, highly cultivated plain with a good deal of marsh-land.

In the following notes, wherever the expression "we" is used it refers, of course, to Major Magrath and myself, as we worked together.

The word "plains" is used, as it usually is in India, to denote the low country—*i. e.*, in this case, below about 3000 feet—as opposed to the main hill-ranges, and not merely the flat country, the greater part of Kohat being a maze of low hills and ravines. Similarly the word "desert" is used in its wider sense to include stony and not necessarily level wastes which cover such a large part of the District (where there is very little sandy desert).

The nomenclature followed is that adopted by Oates and Blanford in the 'Fauna of British India, Birds,' and the numbers placed in brackets before the scientific names are those used in that work.

The following is a list of the papers chiefly referred to, all contributed to the 'Journal of the Bombay Natural History Society':—

Rattray, Colonel R. H.—Birds Collected and Observed at Thall. xii. pp. 337 to 348 (1899).

Marshall, Capt. T. E.—Notes on the Birds near Quetta: Part I. xiv. pp. 601 to 602 (1902); Part II. xv. pp. 44 to 64 (1903).

Fulton, Capt. H. T., D.S.O.—Notes on the Birds of Chitrál. xvi. pp. 44 to 64 and p. 744 (1904).

Rattray, Colonel R. H.—Birds'-nesting in the Murree Hills and Galis. xvi. pp. 421 to 428 and pp. 657 to 663 (1905).

Cumming, J. W. N.—Birds of Seistan. xvi. pp. 686 to 699 (1905).

Ward, Colonel A. E.—Birds of the Provinces of Kashmir and Jammu and Adjacent Districts. xvii. pp. 108 to 113, pp. 479 to 485 (1906), pp. 726 to 729, pp. 943 to 949 (1907); xviii. pp. 461 to 464 (1908).

To obviate the inconvenience of looking up these papers I have added references, and where possible the gist of the note.

My best thanks are due to Dr. Bowdler Sharpe and Mr. Charles Chubb for much assistance in the identification of my skins, and to the former for very kindly going through my notes and putting them into correct form in spite of a great press of other work. Also to Dr. Hartert for going through the series of Wagtail- and Pipit-skins. Lastly, to Dr. Sclater, F.R.S., for most kindly looking through the proofs and seeing the paper through the press.

III.—List of Birds and Remarks.

By Lieut. C. H. T. Whitehead.

[1.] Corvus corax. The Raven.

Rattray, J. B. N. H. S. xii. p. 337 (common round Thall); Marshall, op. cit. xiv. p. 681 (the small race very common and resident at Quetta); Cumming, op. cit. xvi. p. 686 (race in Seistan); Ward, op. cit. xvii. p. 108.

Ravens of all sizes are very common in the cold weather, especially round human habitations, the majority leaving in

April or early in May, but I have counted over 80 roosting together as late as the 18th of May near Kohat.

A few, however, mostly smaller birds, are resident all the year round.

[3.] Corvus corone. The Carrion-Crow.

Cumming, J. B. N. H. S. xvi. p. 686 (common in winter in Seistan, and often seen about houses); Ward, op. cit. xvii. p. 108 (resident in Kashmir, nesting between 8000 and 10,000 ft.).

505. ♂ ad. Kurram Valley, 5800 ft., 19th April.

I am not sure whether this species occurs in the plains or not. Major Magrath has found it fairly common in winter in Bannu, so it probably does. In the Upper Kurram Valley it nests freely in April from 5000 ft. upwards, a Chinar (Plane-tree) near a village being usually selected as a nesting-site. Like the Raven, the Carrion-Crow is not a dweller in the wilds in these parts, but prefers the neighbourhood of mankind.

[4.] Corvus macrorhynchus. The Jungle-Crow.

Rattray, J. B. N. H. S. xii. p. 337 (Thall: very common); Fulton, op. cit. xvi. p. 45 (Lower Chitral: very common); Rattray, t. c. p. 421 (very common up to 9000 ft.: Murree Hills); Ward, op. cit. xvii. p. 108.

Abundant in the plains from November till mid-April (last seen on the 28th), partially taking the place of *C. splendens*. In summer it retires to the Ilex- and Fir-clad slopes of the higher ranges, nesting freely on the Safed Koh.

[5.] Corvus frugilegus. The Rook.

Marshall, J. B. N. H. S. xiv. p. 601 (once seen in January near Quetta); Cumming, op. cit. xvi. p. 686 (common in Seistan in winter); Ward, op. cit. xvii. p. 108 (occurs in winter along the R. Jhelum).

641. ♂ juv. Samana, 6500 ft., 5th March.

744, 745. ♀; 746. ♂ juv. Kohat, 1760 ft., 25th March.

Visits the district in large flocks in winter, arriving in November and remaining as late as the middle of April.

The birds, however, staying on through March appear to be almost all young which have not entirely shed the face-feathers and nasal bristles. Oates, in the 'Fauna of India,' writes: "About January or when the young bird is about nine months old the nasal bristles are cast, and by March the front part of the head has become entirely denuded of feathers." Here, neither are entirely lost till April. The above-mentioned examples represent the ordinary type found here in March.

[6.] CORVUS SHARPII. Sharpe's Hooded Crow.

Corvus sharpii Oates, F. B. I., Birds, i. p. 20; Cumming, J. B. N. H. S. xvi. p. 686 (common in Tamarisk-jungle of Seistan); Ward, op. cit. xvii. p. 109 (a rare visitor to Kashmir).

We have not observed the Hoodie in Kohat, but Mr. Donald, the Political Officer, tells me that he has met with one or two almost every year, generally about the grass-farm. This Crow is a common winter visitor to the Peshawar and Bannu Districts, which are better suited to its habits. From the latter Major Magrath has sent a typical specimen of the race *Corvus cornix sharpii* to the British Museum.

[7.] CORVUS SPLENDENS. The House-Crow.

Rattray, J. B. N. H. S. xii. p. 337 (not common at Thall); Ward, op. cit. xvii. p. 109 (common in the low country).

A resident and extremely common in summer. In mild winters numbers remain, but in severe weather it almost entirely disappears, *C. macrorhynchus* taking its place as the common cook-house scavenger.

[9.] CORVUS MONEDULA. The Jackdaw.

Rattray, J. B. N. H. S. xii. p. 387 (rare in Thall); Ward, op. cit. xvii. p. 109.

A rather rare winter visitor from December till March, occurring with large flocks of Rooks. Major Magrath noted immense flocks coming into the station on five consecutive evenings, just before the cold wave in January

1905. Similar flocks, but mixed with Rooks, roosted in cantonments for a few nights in February 1908.

[10.] Pica rustica. The Magpie.

Marshall, J. B. N. H. S. xiv. p. 601 (common round Quetta); Fulton, op. cit. xvi. p. 46 (very common in Upper Chitral); Cumming, t. c. p. 686 (scarce in Seistan: 1700 ft.); Ward, op. cit. xvii. p. 109 (common in Ladak and Baltistan).

661. Marai, 2900 ft., 9th March.

773. ♀ ad. Raisan, 2400 ft., 1st April.

A resident, but somewhat rare in Kohat, being more often seen in Samilzai than elsewhere; a few pairs also occur on the Samana, where Major Magrath found a nest in April built in an Ilex, just above the tennis-court. In the Upper Kurram Valley it is very common, especially near Peiwar, and occurs up to the tree-limits. The nest is usually placed in an Ilex, and is of the normal type, though often within six or seven feet of the ground. These examples appear to be typical *P. rustica.*

[16.] Dendrocitta rufa. The Indian Tree-Pie.

Rattray, J. B. N. H. S. xii. p. 337 (Thall: a few seen); Ward, op. cit. xvii. p. 109.

670. ♂ ad. Raisan, 2300 ft., 12th March.

709. ♂ ad. Kohat, 1760 ft., 19th March.

A common winter visitor to Kohat, arriving early in September and leaving about mid-April. A few pairs, however, remain to nest, Mr. Donald, the Political Officer, having several times observed young birds in July in the Miranzai Valley barely able to fly.

[24.] Garrulus lanceolatus. The Black-throated Jay.

Rattray, J. B. N. H. S. xii. p. 337 (Thall: common on the hills); Fulton, op. cit. xvi. p. 46 (Lower Chitral: very common from 5000 to 10,000 ft.); Rattray, t. c. p. 421 (very common round Murree); Ward, op. cit. xvii. p. 109.

Rare in the plains. During the cold spell in November and December, 1905, a few individuals occurred about the grass-farms and the orchards of Kohat. A resident on the Samana Range above 5000 ft., but not common.

Fairly plentiful in the Ilex-scrub in the Kurram Valley, occurring up to 8000 ft. Generally goes about in parties of four or five, out of the breeding-season, but sometimes collects into big flocks. Major Magrath observed one of about forty individuals near Peiwar (7000 ft.) in April 1907. Very shy and difficult to observe.

[28.] NUCIFRAGA MULTIPUNCTATA. The Larger-spotted Nutcracker.

Fulton, J. B. N. H. S. xvi. p. 46 (only got one specimen, no others seen): Ward, op. cit. xvii. p. 109, xviii. p. 461 (common: young hatch out in April; probably two broods).

Occurs sparingly amongst the conifers of the Safed Koh, but is more often heard than seen. Its cry resembles the syllables "*kăck-kăck*" rapidly repeated, hence its Pushtu name "Khăkărra."

[30.] PYRRHOCORAX ALPINUS. The Yellow-billed Chough.

Marshall, J. B. N. H. S. xiv. p. 605 (10,000 ft., near Quetta); Fulton, op. cit. xvi. p. 46 (Chitral: very common from 5000 ft. to 16,000 ft., according to season); Ward, op. cit. xvii. p. 109 (occurs from 5500 ft. in winter upwards, often caught in traps set round carrion for foxes).

Not common, but fairly well distributed in summer along the upper slopes of the Safed Koh above tree-limit. By the end of June the birds had collected into small flocks.

[31.] **PARUS ATRICEPS.** The Indian Grey Tit.

Marshall, J. B. N. H. S. xiv. p. 601 (winter visitor to Quetta: seen at Ziarat, 8000 ft., in May); Fulton, op. cit. xvi. p. 46 (Chitral: very common); Rattray, t. c. p. 421 (very common up to 6500 ft.: Murree); Ward, op. cit. xvii. p. 109.

327. ♂ juv. Safed Koh, 7500 ft., 16th July.

A very common winter visitor to the District from mid-September till about the third week in April. A resident on the Samana above 5000 ft. Nests in the Ilex-scrub of the Upper Kurram in fair numbers.

ANTHOSCOPUS CORONATUS. The Turkestan Penduline Tit.

Hartert, Pal. Vögel, i. p. 392.

Lachi, 1500 ft., 25th March; ♂ ♀ ad., Kohat, 1760 ft., 7th–8th April; ♂ ad., Kohat, 1760 ft., 18th March.

Major Magrath first observed a party of these Tits on a Peach-tree in his garden in April 1905. Since then we have met with the bird regularly from mid-March till mid-April in parties of from two or three to forty or more, chiefly frequenting Shisham trees, but also orchards and Camel-thorn scrub. The call-note resembles that of *Zosterops palpebrosa* and is constantly uttered.

Mr. T. R. Bell, I.F.S., was the first to discover this species in India. He met with parties of it in February 1904 in the tamarisk-acacia scrub-jungle near Sukkur, Sind, and procured several examples (*vide* J. B. N. H. S. xvii. p. 244).

[37.] ÆGITHALISCUS LEUCOGENYS. The White-cheeked Tit.

Fulton, J. B. N. H. S. xvi. p. 46 (resident and very common from 6000 to 12,000 ft. in Lower Chitral); Ward, op. cit. xvii. p. 109.

333. ♂ ad. Safed Koh, 1800 ft., 20th July.

391. ♀ ad. Samana, 5000 ft., 5th November.

A resident in the Upper Kurram Valley and on the Samana, being largely reinforced on the latter in winter: some individuals descending to the Miranzai and Samilzai Valleys down to 2500 ft., where I have met with parties as late as the 9th of April.

Breeds freely in the Ilex-scrub near Peiwar from 6000 to 8000 ft. Nesting-operations must commence towards the end of March, as a nest found on the 1st of May contained fully fledged young. The fabric is usually placed near the top of an Ilex-bush from three to seven feet above the ground. It is egg-shaped and rather like that of the British Long-tailed Tit, but a good deal smaller and not quite so neat. It is made of moss and cobwebs outside, lined with a little grass, with a thick inner lining of feathers. The opening is usually near the top, but is sometimes nearer the centre. We came across seven nests altogether, the first six containing young, and the seventh a nearly fresh clutch of five eggs. These are pure white, three having a very faint zone of spots round the large end, the remainder being unmarked, and averaging ·58″ × ·39″. The clutch appears to vary from five to eight. The young closely resemble their parents, but the colours are duller, and the black of the chin and throat is replaced by a few indistinct dusky streaks.

Capt. Keen also observed a pair of these Tits with a newly fledged family on the Samana.

In habits this species closely resembles the Long-tailed Tit, going about in parties of eight or nine in scrub-jungle, continually uttering its call-note, which may be rendered by the syllables "prit-t-t," while it is often in company with *Parus atriceps*.

[44.] LOPHOPHANES MELANOLOPHUS. The Crested Black Tit.

Fulton, J. B. N. H. S. xvi. p. 46 (abundant in Chitral from 5000 to 12,000 ft.); Rattray, t. c. p. 422 (common in the Murree Hills); Ward, op. cit. xvii. p. 110 (common in Kashmir).

Very common on the Safed Koh from 6500 ft. to tree-limit. An early breeder. Major Magrath found a nest containing young on the 25th of April. It has a great variety of notes.

[91.] TROCHALOPTERUM SIMILE. The Western Variegated Laughing-Thrush.

Fulton, J. B. N. H. S. xvi. p. 47 (resident and very common up to 6000 ft. in Lower Chitral); Rattray, t. c. p. 422 (very common round Murree, up to 10,000 ft.); Ward, op. cit. xvii. p. 422.

417. Ad. Samana, 5600 ft., 19th December.

A resident, but rare. Altogether I met with about a dozen individuals in one wooded nullah on the northern slope of the Samana, but nowhere else. It is a great skulker; its loud whistling notes, however, proclaim its presence.

Usually found creeping about the densest part of the undergrowth.

[99.] Trochalopterum lineatum. The Himalayan Streaked Laughing-Thrush.

Rattray, J. B. N. H. S. xii. p. 337 (common in winter: Thall); Marshall, op. cit. xiv. p. 602 (common at 4000 ft. in February: Quetta); Fulton, op. cit. xvi. p. 47 (abundant in Chitral); Rattray, t. c. p. 422 (commonest bird in Murree Hills); Ward, op. cit. xvii. p. 110.

130. ♂ ad. Marai, 3000 ft., 25th February.
579. Sex? Kohat, 1760 ft., 13th February.
633. ♀ ad. ,, ,, 1st March.
653. ♀ ad. Hangu, 2700 ft., 8th March.

Abundant and resident on the Samana, many birds wintering in the Miranzai and Samilzai Valleys, and, in the winter of 1907/1908, quite a number visited the orchards around Kohat, staying till April. Occurs also in the Kurram Valley up to 7000 ft., but not so commonly.

[105.] Argya caudata. The Common Babbler.

Rattray, J. B. N. H. S. xii. p. 337 (abundant at Thall); Cumming, op. cit. xvi. p. 686 (very common in Seistan); Ward, op. cit. xvii. p. 110 (found in the outer ranges).

A resident and very common, especially in scrub-jungle, only occasionally visiting gardens. Does not ascend the hills to any height, its place being taken by the next species.

Breeds in April and May.

[104.] Argya earlii. The Striated Babbler.

Major Magrath obtained an example of this species last March in a reed-bed in Bannu.

[110.] Crateropus canorus. The Jungle-Babbler.

Ward, op. cit. xvii. p. 110 (chiefly confined to Jammu).

639. ♂ ad. Hangu, 2700 ft., 3rd March.
666. ♂ ad. Marai, 3000 ft., 10th March.

A resident, taking the place of the last species from the foot of the hills, where the two occur together, up to 4000 feet in winter and 6000 feet in summer. Fairly common, too, in the Miranzai Valley in winter, wherever there is plenty of scrub-jungle. Not observed in the Kurram Valley.

[139.] Pyctorhis sinensis. The Yellow-eyed Babbler.

Major Magrath has met with parties of this Babbler in the sugar-cane fields and reed-beds of Bannu. An example shot by him is now in the National Collection.

[187.] Myiophoneus temmincki. The Himalayan Whistling-Thrush.

Rattray, J. B. N. H. S. xii. p. 338 (common in winter: Thall); Marshall, op. cit. xiv. p. 602 (Quetta: 7000 ft. in May); Fulton, op. cit. xvi. p. 47 (common in Lower Chitral); Rattray, t. c. p. 422 (common in Murree Hills); Ward, op. cit. xvii. p. 110.

A fairly common winter visitor from mid-September till mid-April, rather rare round Kohat, but common in the Miranzai and Samilzai Valleys and on the Samana. A resident in the Kurram Valley, nesting between 6000 and 8000 feet. Usually found about cliffs and groves near water, but sometimes in very dry shadeless spots some distance from water.

[191.] Larvivora brunnea. The Indian Blue-Chat.

Rattray, J. B. N. H. S. xvi. p. 423 (common at Murree); Ward, op. cit. xvii. p. 110 (nests in Kashmir up to 8000 ft.).

Occurs in summer along the lower slopes of the Safed Koh between 6500 and 8000 ft., but is not common except in one or two secluded glens. Very shy, has a rich but quite short song.

[226.] Zosterops palpebrosa. The Indian White-eye.

774. ♂ ad. Kachai, 2700 ft., 1st April.

A cold-weather visitor to the District, the first parties arriving in August, but it does not become common till October, and leaves toward the middle of April. Possibly a resident on the Samana: a party of eight or nine stayed there during the winter of 1906–07, in spite of frequent heavy snow-storms; a large number arrived early in April, though whether only on migration or not I cannot say, as I left shortly afterwards. Not observed in the Kurram Valley.

[269.] HYPSIPETES PSAROIDES. The Himalayan Black Bulbul.

Fulton, J. B. N. H. S. xvi. p. 47 (common in summer); Rattray, t. c. p. 424 (common round Murree); Ward, op. cit. xvii. p. 111 (common in Kashmir).

583. ♀ ad. Kohat, 1760 ft., 15th February.
630. ♂ ad. „ „ 1st March.

In 1907 several parties of this species visited the district early in February, staying till the end of March. They were always to be found about the same spot, never wandering far away. Berries of the Bakain tree seemed to form their staple food.

[283.] MOLPASTES INTERMEDIUS. The Punjab Red-vented Bulbul.

Ward, J. B. N. H. S. xvii. p. 111 (found in Pooneh and Jammu).

634. ♀ ad. Kohat, 1700 ft., 1st March.
733. ♂ ad. „ „ 23rd March.
786. ♂ ad. „ „ 4th April.

A resident and not uncommon in the gardens and orchards around Kohat, though seldom seen elsewhere in the District. This species, as Major Magrath has pointed out, probably interbreeds with *M. leucogenys,* as they are so often seen together, and birds intermediate in colouring are so common (*vide* next note). Mr. Donald, the Political Officer, states that on two separate occasions he has met with the present species in Kohat paired with a yellow-vented Bulbul and *at the same nest.* Further, that it is well known amongst local gardeners that the red- and yellow-vented Bulbuls do interbreed, their progeny being known as "Neemchi," *i. e.* half-breeds. *M. intermedius* is the common resident Bulbul of the Peshawur district north of Kohat.

List of hybrids between *M. intermedius* and *M. leucogenys.*

					Ear-coverts	Under tail-coverts
590.	♂ ad.	Kohat,	1760 ft.,	16th Feb.	dingy white.	yellow.
564.	Ad.	,,	,,	6th ,,	,,	orange.
631.	♀ ad.	,,	,,	1st Mar.	dark brown.	red.
635.	♀ ad.	,,	,,	2nd ,,	,,	pale buff.
689.	♀ ad.	,,	,,	16th ,,	dirty white.	yellow with orange tips.
700.	♂ ad.	,,	,,	17th ,,	white.	orange.
710.	♀ ad.	,,	,,	19th ,,	dark brown.	dull crimson.
735.	♀ ad.	,,	,,	24th ,,	,,	,,
758.	♂ ?	,,	,,	28th ,,	dusky white.	orange.
785.	♀ ad.	,,	,,	4th Apr.	dull white.	lemon-yellow.
790.	♂ ad.	,,	,,	5th ,,	,,	brownish orange.
791.	♂ ad.	,,	,,	5th ,,	,,	orange-yellow.

(A truly wonderful series, but the birds *must* be hybrids.—*R. B. S.*)

[These remarks are by Dr. Sharpe, and from them it will be seen that the series ranges from an almost pure *M. intermedius* to a nearly pure *M. leucogenys.* No two examples are alike, some being more like "*intermedius*," others more like "*leucogenys*" or "*leucotis*."]

[284.] MOLPASTES LEUCOGENYS. The White-cheeked Bulbul.

Fulton, J. B. N. H. S. xvi. p. 47 (Chitral: summer visitor from March to October; very common up to 7000 feet); Ward, op. cit. xvii. p. 111 (very common in Kashmir).

591.	♂ ad.	Kohat,	1760 ft.,	16th Feb.	Very grey on the breast, but with pale yellow under tail-coverts.
724.	♂ ad.	,,	,,	21st Mar.	,, ,, ,,
767.	♀ ad.	,,	,,	31st ,,	More typical.
779.	♂ ad.	,,	,,	2nd Apr.	,, ,,
780.	Ad.	,,	,,	,,	,, ,,
789.	♀ ad.	,,	,,	5th Apr.	,, ,,
792.	♂ ad.	,,	,,	,,	,, ,,

[I do not call these birds true *P. leucogenys*, as they are so much darker on the head, which is nearly blackish, and have not the olive on the back. They illustrate how variable is the coloration of this species in Kohat. In spite of its abundance it is difficult to procure an example true to type. Most of the birds seen have the breast mottled, *i. e.* instead of having the black of the upper breast clearly defined from the light colour of the lower parts, it graduates into it, frequently combined with a mottled back and sullied cheek-patches and a blackish head with or without a supercilium.

Major Magrath, who has specially studied the Bulbuls in Bannu, kindly contributes the following note on the present species :—

"Dr. Bowdler Sharpe is, I believe, inclined to the view that this Bulbul differs generically from *Molpastes*. With this I can hardly agree. Seen in its natural state, the bird is a true *Molpastes*. In habits and notes it differs little from the next species, with which it mixes freely, and from which it is anything but easy to distinguish when in a tree. It seems likely that the two species interbreed, but I have had no opportunity of observing a fertile cross, although I have seen wild birds which looked very like hybrids between the two species. The diet of the present species is perhaps more insectivorous than that of the next. It is much addicted to the habit of fly-catching in the evenings, and is often seen on the ground feeding on ants and grubs under trees. It is less of a garden bird than the next species. Its staple food in these parts is the berries of the Ber (*Zizyphus vulgaris*) and Boquain (*Melia azedarach*) trees. Numbers of this species are caught in Bannu in winter and hawked about the bazaars, perched on pieces of stick, to which they are attached by a long string tied round the body. Although I have examined several of these captives and bought many in order to release them, in no case have I seen among them a bird of the next species, which is also so common at Bannu. I attribute the ease with which the present species is caught to its greater feebleness and to its partiality for the grubs of the white ant, with which the traps are usually baited: this attraction the birds are simply unable to resist."

This Bulbul is resident in Kohat, and breeds freely in the Station and in the orchards round about.

[285.] Molpastes leucotis. The White-eared Bulbul.

Rattray, J. B. N. H. S. xii. p. 338 (common in February and March, a few pairs staying to breed): Marshall, op. cit. xiv. p. 602 (a few occur in March and April): Cumming, op. cit. xvi. p. 686 (Seistan: saw several which appeared to be of this species, but failed to secure any).

In July 1905 Major Magrath found a pair of Bulbuls nesting in his garden which he took to be of the present species. At that time he concluded that this bird in summer replaced the last as the breeding species in Kohat and was unaware, as we subsequently discovered (*vide* note on the last species), that *M. leucogenys* bred commonly in and around Kohat. Unfortunately we did not critically study the Bulbuls at that time, and not having since spent a "hot-weather" in Kohat we have not had an opportunity of collecting any examples of the present species. According to Major Magrath, the note of this bird is well represented by the following words repeated rapidly: "Quick—a drink with you?"

[Molpastes magrathi. Magrath's Bulbul.

Whitehead, Bull. B. O. C. xxi. p. 48 (1908).

In February 1907 Major Magrath sent a skin of a Bulbul obtained in the Bannu District to Dr. Bowdler Sharpe. The latter and other eminent ornithologists who examined it, finding that there was nothing exactly like it in the National Collection, were of opinion that it belonged to a new species. This opinion was further strengthened by the arrival of three more specimens collected by Major Magrath in the same locality. These all agreed more or less with the first example sent, except that the black of the breast in one was clearly defined from the whitish lower parts, instead of graduating into them as in the other specimens. At a meeting of the British Ornithologists' Club held on the 15th of January, 1908, I exhibited these specimens and described the bird as a new species, naming it as above in honour of its discoverer.

Major Magrath's specimens differ from the hybrid forms already described in being closely allied to *M. leucotis* and not to *M. leucogenys*. It is difficult to ascribe them to a hybrid form, as in the case of the Kohat birds, because *M. intermedius* does not, Major Magrath assures me, occur in Bannu, and *M. leucogenys* there is always more or less true to type.]

[320.] Sitta kashmirensis. Brooks's Nuthatch.

Fulton, J. B. N. H. S. xvi. p. 48 (Chitral: very common from 6000 to 11,000 ft.: Ward, op. cit. xvii. p. 111 (obtained in April in Kashmir).

Fairly common on the Peiwar Spur of the Safed Koh and in the adjoining nullahs from 7500 to 10,000 ft.

[323.] Sitta leucopsis. The White-cheeked Nuthatch.

Fulton, J. B. N. H. S. xvi. p. 48 (Chitral: very common from 7000 to 12,000 ft.); Rattray, t. c. p. 424 (fairly common above 8000 ft.: Murree Hill); Ward, op. cit. xvii. p. 111 (fairly common).

This is the common Nuthatch of the Safed Koh, from 8000 ft. to tree-limit. Its curious call-note, resembling the word "pain" (pronounced like the French word for "bread"), may be heard all day long.

[327.] Dicrurus ater. The Black Drongo, or King Crow.

Rattray, J. B. N. H. S. xii. p. 338 (summer visitor to Thall); Fulton, op. cit. xvi. p. 48 (Chitral: common in summer up to 5500 ft.); Ward, op. cit. xvii. p. 111 (Kashmir: occurs up to 7000 ft.).

One of our commonest summer visitors from the plains up to 8500 feet in the Kurram Valley, the first birds arriving in the middle of March and the species becoming common a fortnight later. It disappears towards the end of October. Probably, however, the Drongo we observed above 7000 feet on the Safed Koh belonged to the allied species *D. longicaudatus*, the differences not being very marked and the latter being a common bird in the Murree Hills. Unfortunately no examples were procured.

[341.] CERTHIA HIMALAYANA. The Himalayan Tree-Creeper.

Fulton, J. B. N. H. S. xvi. p. 48 (shot in August); Rattray, t. c. p. 424 (Murree Hills: very comon); Ward, op. cit. xvii. p. 111 (abundant up to 10,000 ft.).

623. ♀ ad. Kohat, 1760 ft., 29th February.
690. ♀ ad. „ „ 16th March.

A common cold-weather visitor to the District from September till April, occurring on the Samana up to 6000 feet. It does not by any means restrict itself to trees: I have often noticed it climbing up walls.

Breeds in fair numbers on the Safed Koh, from 7000 to 9000 feet.

The call-note is a faint squeak, rarely heard in winter, though in summer its loud but rather monotonous song is constantly uttered.

[348.] TICHODROMA MURARIA. The Wall-Creeper.

Marshall, J. B. N. H. S. xiv. p. 602 (Quetta: occurs in winter from 1000 feet upwards); Fulton, op. cit. xvi. p. 48 (Chitral: common from October till April); Ward, op. cit. xvii. p. 111 (winter visitor, sometimes assuming black throat-feathers).

40. Ad.? Khushalgarh, 1200 ft., 16th December.
315. ♂ juv. Safed Koh, 15,000 ft., 12th July.

A winter visitor to the District from October till mid-March; common on the Samana, but less so elsewhere. Generally found singly or in pairs about cliffs, but occasionally some distance from rocks on earth-banks.

An example shot on the 13th of March had the black feathers on the throat and breast well developed.

On the 12th of July, 1906, I came across a newly-fledged family at 15,000 feet on the Safed Koh, in the shale screes, and shot one specimen. The wing- and tail-feathers were only partially grown, the bill was quite soft and very short, and bits of down were still adhering to its plumage. It would therefore appear that the Wall-Creeper nests within Indian limits. When touring through the Kaghan Valley, Hazara District, this year (10th of July, 1908) my shikari minutely described to me a bird that he had seen that day, which could scarcely be anything else but a Wall-Creeper.

Mr. S. L. Whymper also informed me in a letter (I have not got this by me, but, so far as I remember, it was to the following effect) that a friend of his had actually found a Wall-Creeper nesting somewhere on the North-West Frontier, but had been unable to get at the nest.

ANORTHURA MAGRATHI. Whitehead's Wren.

Whitehead, Bull. B. O. C. xxi. p. 19 (1908).

343. ♂. Safed Koh, 12,500 ft., 6th August.

344. ? Safed Koh, 8500 ft., 8th August.

Bill blackish, base and gape yellow; tarsus brownish flesh-coloured; iris brown.

This appears to be a well-marked race of *A. neglecta*, differing from it in being almost uniform in colouring above, the barring being scarcely perceptible, and in having the throat ashy grey. In summer it is found fairly commonly on the Safed Koh, from 8000 feet upwards, chiefly in the juniper-scrub. I have met with it on the very summit of the range, picking about amongst the rocks.

In habits and song it closely resembles *A. parvula*.

[358.] REGULUS CRISTATUS. The Goldcrest.

Ward, J. B. N. H. S. xvii. p. 111, and xviii. p. 461 (not common; eggs taken in May, June, and July in the Liddar Valley, Kashmir).

Fairly numerous in summer amongst the firs and deodars of the Safed Koh from 8000 to 11,000 feet.

[359.] AËDON FAMILIARIS. The Grey-backed Warbler.

Rattray, J. B. N. H. S. xii. pp. 225, 339, & 579 (fairly common at Thall; found several nests); Watson, op. cit. xv. p. 144 (occurs at Chaman, near Quetta, in August and

September); Cumming, op. cit. xvi. p. 686 (very common in Seistan in summer).

246. ♀ ad. Kohat, 1760 ft., 6th May.

Fairly common up to 3500 feet, from April till September, in dry scrub-jungle; round Thall it is particularly common. In the breeding-season the male may often be seen perched on the top of a bush, pouring forth its sweet song. In many of its habits it resembles the Indian Robin (*Thamnobia cambayensis*), especially in the way it flirts and spreads its tail, and also in its tame and confiding habits. If the intruder happens to approach the nest, the pair will follow him about uttering their alarm-cry—*wŭtch, wŭtch*. If the nest be found they get terribly excited, and will sometimes remain hovering in the air within a few feet. Of five nests taken, three were placed in thorn-bushes close to the ground, the other two on the ground under low shrubs. They were cup-shaped and loosely constructed of coarse grass and roots. I looked in vain for the bit of serpent-skin which Mr. Dresser, in the 'Manual of Palæarctic Birds,' states is always found in the nest of this species.

The specific title (*familiaris*) is very appropriate, but the trivial name (Grey-backed) seems to be only misleading, for the back is fulvous-brown, the most noticeable feature being the bright red, white-tipped tail which the bird is so fond of displaying.

[362.] LOCUSTELLA STRAMINEA. The Turkestan Grasshopper-Warbler.

742. ♀ ad. Kohat, 1760 ft., 25th March.
749. Sex ? ,, ,, 26th March.
776. ♂ ad. ,, ,, 2nd April.

Passes through the District in fair numbers from the third week in March till the middle of May. Not observed in autumn. It is chiefly found on the grass-farms and in young crops, occasionally in the gardens. It is not such a skulker as one would expect; there is no difficulty in flushing it, but it is not easy to observe or to shoot, except on the wing.

[363.] ACROCEPHALUS STENTOREUS. The Indian Great Reed-Warbler.

Ward, J. B. N. H. S. xvii. p. 112 (breeds in Kashmir in June).

Common on migration from the end of March till well into June, and again in August and September; possibly a few stay to nest in Kohat.

I found a small colony nesting in a reed-bed near Dandar, in the Kurram Valley, on the 9th of July.

[366.] ACROCEPHALUS DUMETORUM. Blyth's Reed-Warbler.

Ward, J. B. N. H. S. xvii. p. 112 (summer visitor to the Valley of Kashmir).

203.	♀ ad.	Kohat,	1760 ft.,	13th April.
231.	♂ ad.	,,	,,	29th April.
247.	♂ ad.	,,	,,	6th May.
360.	Juv.	,,	,,	30th August.

Like the last species, this Warbler passes through in great force in April, May, and early June, returning in August and September. Not often found in reed-beds, preferring shady gardens and orchards. The sweet rambling song may often be heard issuing from the midst of a thick mulberry-tree. Probably breeds in the Upper Kurram Valley.

The upper plumage of this species is distinctly tinged with olivaceous. Mr. Oates does not mention this in the 'Fauna of British India.'

[367.] ACROCEPHALUS AGRICOLA. The Paddyfield Reed-Warbler.

Ward, J. B. N. H. S. xvii. p. 112 (nest not found).

729. ♂ ad. Kohat, 1760 ft., 23rd March.

Our commonest Reed-Warbler on migration, passing through from the third week in March till about the end of May and returning in August, September, and October. Seldom found far away from reed-beds or irrigated crops.

Occurs with the last species on migration in the Kurram Valley, and perhaps breeds there. Both Davidson ('The Ibis,' 1898, p. 9) and Lieut. Wilson (J. B. N. H. S. xii. p. 635) found it nesting in Kashmir.

[374.] Orthotomus sutorius. The Indian Tailor-bird.

Ward, J. B. N. H. S. xvii. p. 112 (occurs in Jammu, but is rare).

751. ♀. Kohat, 1700 ft., 27th March.

A resident, common in gardens and orchards around Kohat. Not observed in the Kurram Valley.

[377.] Lusciniola melanopogon. The Moustached Sedge-Warbler.

152. ♂ ad. Kohat, 1850 ft., 19th March.

696. ♀ ad. Lachi, 1540 ft., 17th March.

A winter visitor in small numbers, largely reinforced in February and March. I have searched for it in May in the plains without success, but, on the other hand, I shot an example at Dandar (4700 ft.) in the Kurram Valley on the 20th of April. The wing and wing-muscles, however, are so feeble that it can scarcely go very far away to breed. Has a pleasing song which is often uttered, even in winter.

[381.] Cisticola cursitans. The Rufous Fantail-Warbler.

77. ♀ ad. Kohat, 1760 ft., 11th January.

Abundant in summer wherever there is cultivation. The majority leave in autumn, but a few stay through the winter, and are then more often found in and around reed-beds than elsewhere. In the Kurram Valley we observed it as high as Parachinar (5700 ft.).

[384.] Franklinia buchanani. The Rufous-fronted Wren-Warbler.

121. ♂ ad. Jabba, 2400 ft., 18th February.

781. ♂ ad. Kohat, 1760 ft., 3rd April.

A common resident in the scrub-jungle of the District, though it does not ascend the hills. It usually occurs in small parties or pairs and is always on the move, either creeping about in bushes or running mouse-like along the ground from one bush to another. In spring the air resounds with its cheery little song.

[394.] HYPOLAIS RAMA. Sykes's Tree-Warbler.

Marshall, J. B. N. H. S. xiv. p. 602 (summer visitor, nesting in May: Quetta); Bentham, op. cit. xvi. p. 749 (nests freely in rose-hedges: Quetta).

546. ♀ ad. Thall, 2500 ft., 11th May.
759. ♀ ad. Kohat, 1760 ft., 29th March.

Occurs sparingly on migration.

[396.] HYPOLAIS CALIGATA. The Booted Tree-Warbler.

Ward, J. B. N. H. S. xvii. p. 112 (passes through Baltistan, but rare).

229. ♂ ad. Kohat, 1760 ft., 29th April, 1906.
551. ♀ ad. Thall, 2500 ft., 15th May, 1907.

Passes through in fair numbers in April and May, returning in August. Usually found in dry scrub. In appearance very like *Phylloscopus tristis,* but not quite so active. I think it possible that this species may breed within our limits.

[Major Magrath procured an example of the rare *Hypolais obsoleta* at Bannu on the 8th September, 1907. It was creeping about in grass with others.]

[398.] SYLVIA CINEREA. The Common Whitethroat.

Ward, J. B. N. H. S. xvii. p. 112.

357. ♀ ad. Kohat, 1760 ft., 30th August.
358. ♂ ad. ,, ,, ,,

Not common. Only a few observed during the autumn migration at the end of August and beginning of September 1906.

[399.] SYLVIA JERDONI. The Eastern Orphean Warbler.

Marshall, J. B. N. H. S. xiv. p. 602 (common in April and May: Quetta); Cumming, op. cit. xvi. p. 687 (common in the Tamarisks: Seistan); Betham, t. c. p. 831 (nests freely in April and May above 7000 ft.: Quetta); Ward, op. cit. xvii. p. 112 (recorded at Gilgit on migration).

491. ♀ ad. Thall, 2500 ft., 14th April.

A summer visitor, and not common. Has a very fine song.

We found several pairs in the scrub round Thall in April. On picking up the above-mentioned example, I noticed some cobwebs in the bill, and on looking round found a nest in a thick bush close by. It was composed of roots, bits of green plants, and a lot of cobwebs, and had not been completed.

[400.] SYLVIA NANA. The Desert-Warbler.

Watson, J. B. N. H. S. xv. p. 145 (occurs near Chaman).

452. Sex ? ad. Lachi, 1500 ft., 24th February.

This example was shot creeping about in a thorn-bush in the desert. Only one other was seen, in a similar spot, the following year.

[401.] SYLVIA ALTHÆA. Hume's Lesser Whitethroat.

Marshall, J. B. N. H. S. xiv. p. 602 (believes that this sp. is fairly common at 8000 ft. in May); Fulton, op. cit. xvi. p. 48 (shot three in May between 5000 and 7000 ft.): Ward, op. cit. xvii. p. 112, and xviii. p. 461 (eggs taken in May and July at 8000 ft.).

232. ♀ ad. Kohat, 1760 ft., 29th April.

Passes through Kohat and the Kurram Valley in spring and autumn, but is not common. In spring I have generally observed it in Shisham trees (*Dalbergia sissoo*) in company with the next species. These trees are then in flower and attract much insect-life. Birds shot in them generally have their heads covered with pollen. This Whitethroat is a beautiful songster.

[402.] SYLVIA AFFINIS. The Indian Lesser Whitethroat.

Rattray, J. B. N. H. S. xii. p. 338 (winter visitor, not common: Thall); Betham, op. cit. xvi. p. 831 (a few pairs nest round Quetta); Ward, op. cit. xvii. p. 112 (common in summer in Kashmir).

41. Sex ? Khushalgarh, 1200 ft., 16th December.

101. ♀. Kohat, 1760 ft., 5th February.

Passes through in large numbers in spring and autumn, a few staying for the winter. Breeds freely in the Kurram Valley in Ilex-scrub and low bushes from 6000 to 8000 feet. Like the last species it has a pleasing and remarkably loud song, often uttering it on the wing. Much more confiding in summer than at other seasons.

[403.] Sylvia minuscula. The Small Whitethroat.

Marshall, J. B. N. H. S. xiv. p. 602 (small flocks on migration in April).

521. ♀ ad. Peiwar, 6500 ft., 22nd April.

Probably not uncommon, but owing to its close resemblance to the last species must have often been overlooked. Altogether I shot some half-dozen specimens around Kohat in the cold weather. It appears to breed, in company with the last species, in the Kurram Valley, this example having been secured in a locality where many of the latter were then nesting.

[407.] Phylloscopus tristis. The Brown Willow-Warbler.

Marshall, J. B. N. H. S. xiv. p. 602 (shot one in February); Ward, op. cit. xvii. p. 112 (eggs taken in Ladakh).

56. ♂ ad. Kohat, 1760 ft., 31st December.
110. ♂ ad. ,, ,, 11th February.

Extremely common up to about 5000 feet from early September till about the middle of May. Found everywhere, in gardens, groves, scrub-jungle, and desert; also on stony hill-sides where there is vegetation, in bare stubbles, and standing crops. It frequents more especially the neighbourhood of water, reed-beds, water-plants, and irrigation cuts. An expert flycatcher and very active. Except in spring, it is very silent.

[408.] Phylloscopus indicus. The Olivaceous Willow-Warbler.

Ward, J. B. N. H. S. xvii. p. 112 (eggs taken in August in Ladakh, 11,500 ft.).

185. ♂ ad. Kohat, 1760 ft., 5th April.

Passes through Kohat in small numbers on migration in March and April. I only once observed it on the return migration, when a solitary example was seen on the 16th of September. Nests freely in parts of the Safed Koh Range. Differs in habits from other Willow-Warblers in being rather a skulker, as it is usually found hopping and creeping about in the undergrowth. Its loud call-note of "*tack*" often indicates its whereabouts.

[411.] Phylloscopus neglectus. The Plain Brown Willow-Warbler.

Ward, J. B. N. H. S. xviii. p. 461 (eggs taken and parents secured at Kargil in May and June).

706. ♀ ad. Kohat, 1760 ft., 18th March.

This species is so difficult to distinguish from *P. tristis* until actually examined in the hand, that it is impossible to say whether it is fairly common or merely a straggler. The above-mentioned example was the only one secured. It was busily fly-catching in a willow just like *P. tristis*.

[415.] Phylloscopus proregulus. Pallas's Willow-Warbler.

Rattray, J. B. N. H. S. xvi. p. 424 (nests freely in the Galis); Ward, op. cit. xvii. p. 112 (common in Kashmir).

664. ♀ ad. Marai, 3000 ft., 9th March.
667. ♀ ad. Kachai, 2700 ft., 10th March.

Not common. I have met with it in spring at the foot of the hills and in summer on the Safed Koh at 8500 feet. Its song is very characteristic.

[416.] Phylloscopus subviridis. Brooks's Willow-Warbler.

102. ♂ ad. Kohat, 1760 ft., 5th February.
113. ♀ ad. „ „ 10th February.
276. Sex ? Samana, 6500 ft., 12th April.
319. ♀ ad. Safed Koh, 8800 ft., 13th July.

Fairly common in the District from October to April. Generally found solitary or in pairs in scrub and wild olive-groves, more rarely in orchards and gardens. Occurs on the Samana in large numbers on migration. Nests freely on the lower slopes of the Safed Koh from 7000 to 9000 feet. A nest found on the 13th of July, 1906, was evidently an old structure re-lined, and was placed in the bank of a nullah under cover of a small bush. It was of the usual Willow-Warbler type and contained four fresh eggs (this was the full clutch, the female having no eggs in the oviduct). They were white, thickly spotted with dark red, and averaged ·55 × ·4 inch.

In summer this Warbler frequently utters a loud monosyllabic call-note, not unlike that of the next species but not so loud. In winter this is only occasionally heard.

[418.] Phylloscopus humii. Hume's Willow-Warbler.

Fulton, J. B. N. H. S. xvi. p. 48 (only two obtained in Chitral); Rattray, t. c. p. 424 (very common in the Murree Hills); Ward, op. cit. xvii. p. 113 (breeds in Kashmir).

48. Ad. Kohat, 1760 ft., 23rd December.
55. ♂ ad. „ „ 31st December.
119 & 120. ♂ ad. Kohat, 1760 ft., 16th February.
153. Ad. Kohat, 1760 ft., 18th March.

Abundant in the cold weather in Kohat from September till the end of April, frequenting gardens, orchards, and groves—usually singly. It has a loud call-note resembling the syllable "*chwey*," which is constantly uttered. Occurs on the Samana on migration, and nests in large numbers on the Safed Koh from 7000 to 11,000 feet. Its curious song, which may be rendered "*pi-pi-piaz-z*" (this being repeated with variations), is first heard in March, whilst still in its winter-quarters, and is continued throughout the summer, being usually uttered from the midst of a thick tree.

[421.] Acanthopneuste nitida. The Green Willow-Warbler.

Ward, J. B. N. H. S. xvii. p. 113.

766. Ad. Kohat, 1760 ft., 31st March.
784. ♂ ad. „ „ 2nd April.

Passes through Kohat and the Kurram Valley in large numbers from the last week in March till the end of May, returning in September, when comparatively few are seen. This is the last Willow-Warbler to leave, and I have met with it at Kohat up till the 28th of May. Major Magrath says that this species is extremely common in Bannu in September and October. Its relative scarcity at that season in Kohat, together with that of many other species, may perhaps be accounted for by its following the Kurram River down through the Bannu District instead of turning off at Thall up the Ishkalai, an insignificant stream which connects the Miranzai and Kurram Valleys.

[424.] ACANTHOPNEUSTE MAGNIROSTRIS. The Large-billed Willow-Warbler.

Rattray, J. B. N. H. S. xvi. p. 425 (fairly common in the Galis); Ward, op. cit. xvii. p. 113 (apparently rare).

I have only met with this species on the lower slopes of the Safed Koh, where it nests in small numbers between 7000 and 8000 feet. The call-note is loud and characteristic, the song resembling the syllables "*dirtee*," hence its native name "Deru."

[428.] ACANTHOPNEUSTE OCCIPITALIS. The Large-crowned Willow-Warbler.

Rattray, J. B. N. H. S. xvi. p. 425 (very common round Murree); Ward, op. cit. xvii. p. 113 (nests from 7000 to 8000 ft. in Kashmir).

535. ♂ ad. Kurram Valley, 6800 ft., 28th April.

Occurs sparingly in the Kohat orchards in April and May, but not observed in autumn. Abundant, however, on the Safed Koh Range in summer from 6000 to 10,00 feet, being quite the commonest Willow-Warbler there. Its loud monotonous song may be heard from dawn to dusk all the summer through.

[434.] CRYPTOLOPHA XANTHOSCHISTA. Hodgson's Grey-headed Flycatcher-Warbler.

Rattray, J. B. N. H. S. xvi. p. 426 (rare in Murree Hills, one nest found); Ward, op. cit. xvii. p. 113.

624. ♀ ad. Kohat, 1760 ft., 29th February.

629. ♂ ad. (testes big). Kohat, 1850 ft., 1st March.

665. ♂ ad. Marai, 3000 ft., 9th March.

A fairly common winter-visitor to the district, arriving about the third week in October and leaving early in April. This species and *Suya crinigera* are the only Warblers found on the Samana above 5000 feet all through the winter; it is difficult to understand how they manage to pick up a living, the hill-side being often covered with snow for days together. Frequents scrub-jungle, gardens, and orchards, going about in small parties, and often uttering its pretty little song even in mid-winter.

[445.] Scotocerca inquieta. The Streaked Scrub-Warbler.

Rattray, J. B. N. H. S. xii. p. 338 (Thall : common) ; Watson, op. cit. xv. p. 145 (very common round Chaman, near Quetta).

436. ♀ ad. Banda, 1930 ft., 27th January.

608. ♂ (testes very big). Lachi, 1540 ft., 25th February.

A common resident among scrub on dry stony hill-sides, but not seen above 3500 feet, nor far from the foot of the hills. The specific name is very appropriate : it is never still, but is always flitting or running mouse-like about from bush to bush, only pausing occasionally to sing a few notes of its cheery little song.

[456.] Cettia orientalis. The Eastern Bush-Warbler.

167. ♂ ad. Lachi, 1540 ft., 27th March.
701. ♂ ad. Kohat, 1760 ft., 17th March.
732. ♂ ad. ,, ,, 23rd March.
734. ♀ ad. Chillibagh, 2100 ft., 24th March.

Bill dark brown, lower mandible flesh-coloured, gape yellowish; tarsus flesh-coloured; iris brown.

Passes through Kohat in fair numbers in March, frequenting reed-beds, gardens, and generally thick cover near water. A great skulker, usually occurring singly. My attention was first drawn to this species by a loud note, resembling the syllable "*chéy*," proceeding from the midst of a tamarisk. After much peering, I made out a small brown bird vigorously flirting its tail and evidently much resenting my presence. It was in this way that I always met with it.

[458.] Suya crinigera. The Brown Hill-Warbler.

Rattray, J. B. N. H. S. xvi. p. 426 (nests freely in Murree Hills) ; Ward, op. cit. xvii. p. 113 (common in Kashmir).

663. ♀ ad. Marai, 4000 ft., 9th March.

677. ♂ ad. Thall, 2500 ft., 14th March.

A resident on the Samana and fairly common. In winter it descends to the Miranzai Valley, occurring commonly in the scrub-jungle near the foot of the hills.

We did not meet with it in the Kurram Valley, though I shot one at the entrance, near Thall.

[462.] Prinia lepida. The Streaked Wren-Warbler.

Cumming, J. B. N. H. S. xvi. p. 687 (fairly common amongst the Tamarisks: Seistan, 1700 ft.); Ward, op. cit. xvii. p. 114 (occurs in outer hills, but not in Kashmir proper).

617. ♂ (testes very big). Lachi, 1540 ft., 26th February).
697. ♀ ad. Lachi, 1540 ft., 17th March.
698. ♂ ad. " " "

A resident in the plains, and not uncommon about reed-beds and tamarisk-scrub, being particularly abundant in the Lachi Plain. Nesting-operations are begun in March, and from then till May the curious reeling song is constantly to be heard.

[[463.] Prinia flaviventris Deless.

Major Magrath has found this species common in the reed-beds of Bannu, the adjoining District on the south, and has forwarded examples to the British Museum.]

[466.] Prinia inornata. The Indian Wren-Warbler.

Rattray, J. B. N. H. S. xii. p. 337 (Thall: occurs in the reeds); Ward, op. cit. xvii. p. 113.

683. Ad. Thall, 2500 ft., 14th March.
750. ♂ ad. Kohat, 1600 ft., 26th March.

Resident but rather rare, except along the banks of the Kurram River.

In Bannu, however, where the country is more suited to its habits, Major Magrath has found it extremely common.

[469.] Lanius lahtora. The Indian Grey Shrike.

Rattray, J. B. N. H. S. xii. p. 338 (Thall: an uncommon summer visitor); Marshall, op. cit. xiv. p. 602 (in April near Quetta); Ward, op. cit. xvii. p. 479 (occurs in Jammu).

567. ♂ ad. Kohat, 1760 ft., 6th February.

658. ♀ ad. Hangu, 2650 ft., 8th March.

A resident, chiefly found in the desert, but not commonly, more numerous in winter than summer. Major Magrath found a nest containing four slightly incubated eggs on the 12th of May near Thall. Not met with above 3500 feet in the Kurram Valley.

[473.] Lanius vittatus. The Bay-backed Shrike.

Rattray, J. B. N. H. S. xii. p. 338 (very common and resident at Thall); Marshall, op. cit. xiv. p. 602 (Quetta; an uncommon summer visitor); Fulton, op. cit. xvi. p. 48 (Chitral: common in summer up to 6000 ft.).

520. ♂ ad. Kurram Valley, 6500 ft., 23rd April.

Fairly common from the last week in March till September in Kohat and the Kurram Valley. We both believe that we have observed stray examples of this species in winter, but cannot be certain. I noted it in Lahore, some 200 miles S.E., early in February.

[476.] Lanius erythronotus. The Rufous-backed Shrike.

Rattray, J. B. N. H. S. xii. p. 338 (Thall: abundant); Marshall, op. cit. xiv. p. 602 (Quetta: very common in summer); Fulton, op. cit. xvi. p. 43 (common in Chitral in summer up to 7000 ft.); Betham, t. c. p. 750 (breeds freely); Ward, op. cit. xvii. p. 479 (widely distributed in Kashmir).

A resident, and extremely common in summer everywhere up to 7000 feet. The majority leave for warmer climes in autumn.

[479.] Lanius isabellinus. The Pale-Brown Shrike.

Marshall, J. B. N. H. S. xiv. pp. 602, 606 (Quetta: a summer visitor, nesting in May between 7000 and 9000 feet).

109. ♀ ad. Kohat, 1700 ft., 8th February.

A fairly common winter visitor from October to April.

I shot an example in the Kurram Valley at 6500 feet on the 2nd of May; possibly a few pairs nest up there.

[495.] PERICROCOTUS BREVIROSTRIS. The Short-billed Minivet.

Fulton, J. B. N. H. S. xvi. p. 49 (Chitral: summer visitor, nesting commonly from 7000 to 9000 ft.); Rattray, t. c. p. 426 (nests freely in Murree Hills); Ward, op. cit. xvii. p. 479 (breeds in Kashmir).

A common winter visitor to the District from the end of September to April. Nests freely on the Safed Koh between 6000 and 8000 feet. Captain Keen observed a few on the Samana all through the summer, and believes that they nested there. An example collected by Major Magrath in Bannu, and now in the National Collection, is typical.

[500.] PERICROCOTUS PEREGRINUS. The Small Minivet.

Ward, J. B. N. H. S. xvii. p. 479.

Very rare. I came across a pair in some camel-thorn-scrub (*Acacia modesta*), three miles west of Makhud on the Indus, but unfortunately failed to secure them. It is a bird I know well, however, having frequently met with it near Rawal Pindi (100 miles east), and I have also shot it there.

[518.] ORIOLUS KUNDOO. The Indian Oriole.

Rattray, J. B. N. H. S. xii. p. 338 (common on migration); Marshall, op. cit. xiv. p. 602 (a summer visitor to Quetta); Watson, op. cit. xv. p. 145 (Quetta: common in gardens, mostly immature); Fulton, op. cit. xvi. p. 49 (very common in summer in Chitral up to 8000 ft.); Rattray, t. c. p. 426 (common near Murree at 5500 ft.); Ward, op. cit. xvii. p. 479 (breeds in Kashmir up to 6000 ft.).

A large number pass through Kohat in April and the beginning of May, returning in August and September: many breed in the orchards of the Kurram Valley, a few also in Kohat.

[528.] **Pastor roseus.** The Rosy Pastor.

Rattray, J. B. N. H. S. xii. p. 338 (Thall: passing through in vast numbers); Marshall, op. cit. xiv. p. 602 (common at Chaman at the end of April).

Major Magrath has written the following note on this species in Kohat:—"Passes through this district in vast flocks during the spring and autumn migrations. At the spring passage the birds are slaughtered in hundreds by the natives, every man possessing a firearm turning out for the sport. They arrive about the middle of April and the rush continues till the middle of May. The mulberries, which are ripe at this season, are eagerly devoured by them, and the ripe corn also suffers from their depredations. A few young birds remain in the district throughout the hot weather. The return passage begins about the end of July, being at its height by the middle of August, and lasting into September. Very few adult birds are to be seen at this time. The direction of the flight through the district is N.W. and S.E. for spring and autumn migrations respectively. The vast flocks which roost in and about the cantonments become an unmitigated nuisance while they are with us." Since writing the above, Major Magrath has noted the appearance of small flocks of adult birds in the middle of summer, as also have Captain Keen and I; in fact, between us we have noted them at short intervals throughout the summer, and it seems probable that some of them at least breed a good deal nearer India than Asia Minor. Small flocks of immature birds stay with us till November. Curiously enough, in the spring of 1907 only a few small flocks were observed passing through the Kohat district. The migration appears to have been diverted elsewhere, though whether this was due to the district being invaded at the time by vast armies of locusts in the crawling stage, I cannot say. One would have imagined that this would have had an opposite effect.

[529.] **Sturnus humii.** The Himalayan Starling.

Rattray, J. B. N. H. S. xii. p. 338; Marshall, op. cit. xiv. p. 602 (rare at Quetta, shot in March and April); Ward, op. cit. xvii. p. 479 (very common in Kashmir in summer from 5000 to 7000 feet).

We must have overlooked this Starling. Colonel Rattray records it from Thall as "not common, but a fair number may be seen any day during April and May. . . ." An example shot by me on the 14th of April (the last date on which a Starling was seen) proved to be *Sturnus menzbieri*.

[530.] STURNUS PORPHYRONOTUS. The Central Asian Starling.

Watson, J. B. N. H. S. xv. p. 145 (in flocks in Chaman, near Quetta, in December); Ward, op. cit. xvii. p. 479 (does not appear to breed in Kashmir); Perreau, op. cit. xviii. p. 186 (occurs in Chitral).

62. ♂ ad. Kohat, 1760 ft., 4th January.
688. ♂ ad. Kohat, 1760 ft., 16th March.
719, 721. ♂ ♀ ad. Kohat, 1760 ft., 21st March.

A winter visitor, not so common as the next species, occurring singly or in flocks, often in company with *S. menzbieri*.

As Dr. Sharpe has pointed out to me, both Major Magrath's examples from Bannu and mine from Kohat shew signs of the mixing of this race with some other, the head being generally marked in places with purple gloss.

[532.] STURNUS MENZBIERI. The Common Indian Starling.

Rattray, J. B. N. H. S. xii. p. 339 (Thall: common in winter); Fulton, op. cit. xvi. p. 49 (Chitral: common winter visitor); Cumming, t. c. p. 687 (probably the Starling which occurs in flocks in Seistan in winter); Ward, op. cit. xvii. p. 479 (the majority migrate through, a few nest).

63. ♂ ad. Kohat, 1760 ft., 4th January.
117. ♂ ad. " " 13th February.
718–720. ♂, ♀, ♂. Kohat, 1760 ft., 21st March.

Abundant in the cold weather, arriving about the third week in October and leaving towards the middle of April.

[544.] TEMENUCHUS PAGODARUM. The Black-headed Myna.

Fulton, J. B. N. H. S. xvi. p. 49 (very common in summer in Chitral at 5000 ft.); Rattray, t. c. p. 427 (rare in the Murree Hills): Ward, op. cit. p. 479 (occurs in Kashmir, but is rare).

A summer visitor to the district. I have only twice met with this species, once on the 25th of August, when I observed about a dozen feeding in a garden in company with the Common Myna, and again a pair on the 4th of June. Mr. Donald, the Political Officer, however, tells me that a few pairs nest regularly every year near Hangu (2700 feet), usually selecting holes in the Boquain tree (*Melia azedarach*) as nesting-sites.

[549.] ACRIDOTHERES TRISTIS. The Common Myna.

Rattray, J. B. N. H. S. xii. p. 339 (common and resident); Marshall, op. cit. xiv. p. 602 (a few occur in spring); Fulton, op. cit. xvi. p. 49 (resident in Chitral, occurring up to 8000 ft. in summer); Rattray, t. c. p. 427 (common around Murree); Ward, op. cit. xvii. p. 479.

Resident and extremely common, occurring up to 7000 feet in the Kurram Valley in the summer, and at Fort Lockhart (6500 feet) all the year round, in spite of the heavy snowfall.

[551.] ACRIDOTHERES GINGINIANUS. The Grey Bank-Myna.

Small flocks occur in the District in February and March, and are usually seen following the cattle on the grass-farms. Major Magrath has found the bird fairly common in Bannu, and has sent an example to the British Museum.

AMPELIS GARRULUS. The Waxwing.

Whitehead, Bull. B. O. C. xxi. p. 19.

416. ♀ ad. Samana, 6500 ft., 16th December, 1906.

I first met with this handsome bird on the 11th of December, in a small garden near the Fort, but just as I had sighted it through my glasses, up flew a flock of Goldfinches and began mobbing it, and away it went uttering a soft whistling note. Five days later, on visiting the same spot, I was lucky enough to again find a Waxwing there. It was in fine condition with four wax-like tips to the secondaries of each wing. In addition to this example, Major Magrath shot one, a male (extremely fat), in his garden in Bannu, lat. 33° (apparently the furthest southern record for this species), on the 20th of March. Colonel Ward records another secured on the 8th of the same month at 7000 feet in Kashmir.

[To be continued.]

IV.—*Note on the* Corvus neglectus *of Schlegel.*

By T. Salvadori, H.M.B.O.U.

Colœus neglectus.

? *Corvus dauricus* β var. Pall. Zoogr. Rosso-As. p. 388 (1811).

Corvus dauricus jun. Temm. et Schleg. Fauna Jap., Aves, p. 80, tab. 40 (1850) (Japan).

Corvus neglectus Schleg. Bijdr. Dierk. Amsterd. Afl. 8, Corvus, p. 16 (1859) (Japan); Swinh. Ibis, 1867, p. 227 (Amoy); Gray, Hand-list, ii. p. 14. no. 6233 (1870); Gieb. Thes. Orn. i. p. 786 (1872) (= *C. dauricus*!); Dress. B. of Eur. iv. p. 527 (1875); Blak. et Pryer, Ibis, 1878, p. 232 (Japan); iid. Tr. As. Soc. Jap. x. p. 143 (1882); Seeb. Ibis, 1884, p. 180 (intermediate form between *C. dauricus* and *C. neglectus*: hybrid?); id. B. Jap. Emp. p. 97 (1890) (Japan, Eastern Siberia to N. China); Dress. Man. Pal. B. i. p. 420 (1902); La Touche, Ibis, 1906, p. 433 (Chinkiang).

Corvus monedula Schrenck (nec Linn.), Reis. Forsch. Amurl. i. pt. 2, p. 324 (1860); Sewerz. Journ. f. Orn. 1875, p. 171; Pleske, Mém. Ac. St. Pétersb. 1888, p. 12.

Corvus (*Monedula*) *neglectus* Swinh. Ibis, 1861, p. 259 (Talien Bay, N. China), p. 337 (between Takoo and Peking, N. China).

Lycos neglectus Swinh. P. Z. S. 1863, p. 305 (China, allied to the true *L. monedula*), p. 338 (Amoorland and Japan); 1871, p. 383 (Ningpo to Pekin; closely related to *L. monedula*; also hybrid); Giglioli, Viaggio Magenta, pp. 544, 601 (1875) (Foce del Pehio e Golfo di Petchili); David et Oust. Ois. de la Chine, p. 370 (1877); Taczan. Mém. Ac. Sc. St. Pétersb. xxxix. p. 524 (1903).

Corvus dauricus part. Schleg. Mus. P.-B., Coraces, p. 35. nos. 6, 7 (1867, Japan, types of *C. neglectus*).

Monedula neglecta David, Nouv. Arch. Mus. vii. Bull. p. 9. no. 278 (1871) (Pekin, Setchouan, Mongolia).

Corvus dahuricus (sic) Dyb. u. Parrex, Journ. f. Orn. 1868, p. 332 (schwarz gefärbte Varietäten, Darasun in Daurien).

Lycos dauricus part. Dyb. Journ. f. Orn. 1872, p. 453 (Kultuk); Tacz. Bull. Soc. Zool. Fr. i. p. 171 (1876) (Siberie or.).

Colœus neglectus Sharpe, Cat. B. iii. p. 28 (1877) (Shanghai); Styan, Ibis, 1891, pp. 324, 358 (Lower Yangtse, also hybrids); Pleske, Bull. Ac. Sc. St. Pétersb. 1892, p. 279; Hartert, Vög. pal. Fauna, p. 18 (1903) (höchstwahrscheinlich keine Art!); id. Nov. Zool. 1906, p. 388 (probably not a species, but a dark aberration).

Colœus monedula var. Lönnb. Ark. f. Zool. Stockh. 1905, p. 20.

Corvus dauricus var. *neglectus* Kothe, Journ. f. Orn. 1907, p. 388 (Tsintau, Kiautschou).

Colœus monedula neglectus Schalow, Journ. f. Orn. 1908, p. 117 (Central As.).

Very similar to *Colœus monedula*, from which *C. neglectus* differs in the following points:—

1st. The hind-neck is almost black, so that the black of the pileum is not sharply defined behind.

2nd. The cheeks and ear-coverts are almost black, very slightly tinged with grey.

3rd. The grey patch on the sides of the neck is much reduced, being confined to the upper part, just below the ear-coverts.

4th. Altogether *C. neglectus* is a darker bird than *C. monedula.*

5th. The dimensions are not smaller, as generally stated: one bird in the Museum of Turin has the wing 240 mm. long, while in *C. monedula* the wing is about 230 mm.

Hab. Japan and Eastern Asia from Siberia to N. China.

In the recent work of Dr. Hartert ('Die Vögel der paläarktischen Fauna') *Colœus neglectus* is treated as "hochstwahrscheinlich keine Art." I was rather surprised at this statement, especially as the Museum of Turin possesses two fine specimens obtained on board the ship 'Magenta' while staying in the Gulf of Petchili (Giglioli, 'Viaggio della Magenta,' p. 601). Therefore I was induced to investigate the status of the bird, and I soon perceived that ornithologists were at variance on the subject.

It appears that Pallas was the first to mention the bird, thinking that it was a variety of *C. dauricus.*

Temminck and Schlegel in the 'Fauna Japonica' described specimens from Japan as the young of the same bird; they also gave a good figure of it.

Later on Schlegel (Bijdr. etc.) recognised that the bird figured as the young of *C. dauricus* in the 'Fauna Japonica' was really an adult, and described it under the name of *C. neglectus.* He pointed out that the two typical specimens had the remiges and rectrices worn, so that they could not be young, and besides he rightly noticed that in the Crows the young birds do not differ much in colouring from the adults. Notwithstanding all this, in the 'Museum des Pays-Bas,' Coraces, p. 35, Schlegel went back to the earlier mistake and declared that the two types of *C. neglectus* were nothing but young birds of *C. dauricus*! Swinhoe (P. Z. S. 1871, p. 383) protested against such statement, saying: "I cannot understand Prof. Schlegel considering the following species (*C. neglectus*) the young of this bird (*C. dauricus*). I have taken this bird from the nest and found the young beginning life with all the characters of the adult."

When we consider that Swinhoe, David, Styan, and others have noticed that between the two extreme forms, the pied

C. dauricus and the dark *C. neglectus*, many intermediate forms occur, we must be led to believe that these intermediate forms are hybrids and that *C. dauricus* and *C. neglectus* are distinct species. All recent (Styan and La Touche) and earlier observers (Swinhoe and David) had not the least doubt as to the specific value of the two forms, and I quite agree with them. Of the same opinion seems to be my friend Mr. Dresser, who I think was not much at fault (Man. Pal. B. p. 420) in considering *C. neglectus* a distinct subspecies of *C. monedula*, to which Swinhoe, Giglioli, and others positively say that *C. neglectus* is nearly allied. All field-naturalists who have observed the two forms state that they are frequently found together, and we may suppose it possible that the birds not infrequently have the habit of losing sight of their proper mates.

V.—*On the Decrease in Weight of Birds' Eggs during Incubation.* By Elizabeth Seymour Norton, F.Z.S.*

(Text-fig. 6.)

Circumstances arose last summer which made me curious to ascertain whether a partially-incubated Thrush's egg could be distinguished from a new-laid egg by its weight. The natural inference, in the absence of definite knowledge, seemed to be that an egg containing a living, breathing chick would be heavier than an egg containing only the nearly fluid "yolk and white." A few books that I consulted told me nothing with regard to the weight of eggs; so I began a series of incubations of hens' eggs to find out for myself what occurred. I soon discovered that all the eggs decreased in weight as incubation advanced.

After reaching this conclusion I came across the "Note" by Mr. Hugh S. Gladstone which was published in 'The Ibis' of 1904 (p. 376). Mr. Gladstone shewed the average decrease of Pheasants' eggs during incubation to be a little over 14

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* Communicated by Mr. W. P. Pycraft, F.Z.S., M.B.O.U.

Text-fig. 6.

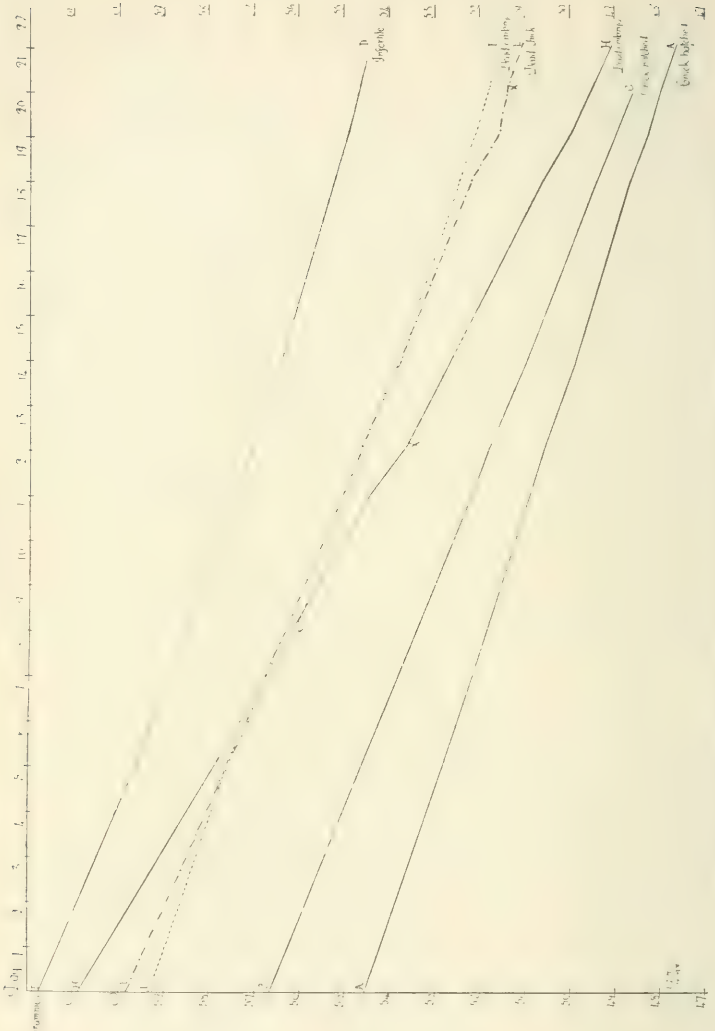


Diagram showing the loss of weight in six fowls' eggs during incubation.

EXPLANATION OF THE DIAGRAM.

Each line in the diagram shews how an individual egg decreased in weight from day to day. The weight in grammes (shown at the sides) determines the height of the line, and the time in days (shown at the top) determines the length of the line. Thus, the line of the egg I commences at the point denoting 59·8 gr. on the beginning of the first day of incubation, and it ends at the point denoting 51 gr. on the 22nd day; the egg was opened that day and was found to contain a dead chick. **X** marks the approximate time of the death of the chick or embryo.

per cent. In a letter published later in 'The Ibis,' 1904, p. 662, Mr. Nevin Foster stated that the decrease in the weight of Thrushes' and Blackbirds' eggs during incubation is about 15 per cent. My results shew that, in like manner, hens' eggs lose weight during incubation to the extent of between 14 and 15 per cent. For example, the average weight of 12 eggs descended from 57·66 grammes to 49·23 grammes in 20 days: this is an average decrease of 14·58 per cent.

Apparently all the eggs weighed by Mr. Gladstone contained living chicks. Now in each of my batches of incubated eggs some proved infertile and others contained dead embryos of varying ages. The curious and interesting fact is, that in every case the infertile and dead-embryo-bearing eggs decreased in weight in very nearly the same degree as did the eggs which eventually hatched out into sturdy chicks. A line which shews the average decrease in weight of three clear, infertile eggs is nearly parallel to that line which shews the average weight-decrease of three eggs—incubated at the same time—from which emerged three perfectly developed chicks.

On examining the lines shewing the loss of weight of individual eggs, I noticed another interesting point—a line generally makes a sudden, erratic drop just before that spot which marks the death of the embryo. Thus, an egg which at the close of the period of incubation contained a dead embryo appears to have suffered an increased loss of weight when the embryo was dying.

The chemical examination and explanation of the loss in weight of incubated eggs, and especially of the fact that the weight-lines of dead and living eggs are so nearly parallel, would prove of great interest. I found that the infertile eggs had not become at all putrid at the end of three weeks' incubation: apparently they lost weight by losing water only. The living eggs, one might assume, would lose water to the same extent as the dead ones, for they were kept under identically similar conditions; but the eggs containing living chicks have the weight of the products of respiration and excretion to be accounted for.

These experiments were conducted at the Regent Street Polytechnic Biological Laboratory; and I have to thank Mr. G. P. Mudge for many kind hints as to my methods of working.

VI.—*On the Birds of Bulawayo, Southern Rhodesia.* By E. C. Chubb, Assistant Curator, Rhodesia Museum, Bulawayo.

The material upon which this paper is based has mostly been collected by myself and others for the Rhodesia Museum during the last eighteen months, although it has been thought worth while, for the sake of completeness, to include in it a number of birds belonging to Mr. R. Douglas, which he has allowed me to examine. These are distinguished by an asterisk.

Bulawayo is situated on the water-parting which divides the Limpopo from the Zambesi River basin, at an altitude of 1450 feet above the sea. The geological formation upon which it rests is schist, while there are outcrops of granite at several places within three or four miles of the town, *e. g.* at the Hillside Kopjes and at the Waterworks Reservoirs.

Encircling the town for a radius of about three miles is the "Commonage," where most of the specimens have been collected, but a number of birds and nests have been obtained at Belle Vue Farm, where I am now living, some four miles south of Bulawayo. The Commonage consists of fairly thick Bush, composed largely of *Acacia horrida* and other leguminous trees, and several species of *Combretum*, while *Copaifera mopani* is common on the granite soil. These trees are all small, averaging in height from eight to ten feet: the absence of large trees being due to the fact that fifteen years ago, prior to the occupation of the country by the White Man, the Commonage was under cultivation by the natives belonging to the chief Lobengula's kraal, the site of the kraal being now occupied by the present town.

The annual rainfall of Bulawayo ranges between 20 and

30 inches, and practically all of this falls during the summer months, viz. from October to March. On account of the elevation of the town and its situation on the water-parting, the rainfall is rapidly drained away, and it is only where artificial dams have been built, as at the Waterworks, that there are any permanent sheets of water.

Although well within the tropics, the small number of really tropical species occurring here is remarkable, and may probably be accounted for by the high altitude and dry climate.

The Whitethroat (*Sylvia cinerea*) and the Senegal Coucal (*Centropus senegalensis*) are now recorded for the second time from South Africa, while the following sixteen species appear to be new to Southern Rhodesia:—

Glareola melanoptera.
Ardetta payeti.
Dendrocygna viduata.
Halcyon albiventris.
Coccystes serratus.
Erythropygia zambesiana.
Dryodromas fulvicapilla.
Eremomela polioxantha.
Camaroptera sundevalli.
Fiscus subcoronatus.
Anthus vaalensis.
Mirafra nigricans.
Hypochera funerea.
Pyromelana taha.
Coccopygia dufresnii.
Oriolus larvatus.

The dominant native race in this the Western Division of Southern Rhodesia is the Matabele, a branch of the great Zulu nation, which in 1836, under the leadership of Mziligazi, came up from the south, conquered the various tribes then living in the country, and settled among them, taking their women for wives and their children as slaves.

These natives take a great interest in the animals and birds around them, having separate names for most of the species. But it is the young boys who are most conversant with the names of the smaller and less conspicuous birds; for at this age most of their time is spent in herding cattle and sheep, and they observe and talk about the birds that they see.

I have given the Matabele names to as many species as I have been able. In reading these names, C and Q are to be pronounced like the Zulu "clicks": the former is much the same sound as "tut," which we often use to indicate vexation. The "q" click is very similar to the "pop" of a cork when extracted from a bottle.

I have to express my best thanks to Dr. Bowdler Sharpe, who has been good enough to look over this paper and has identified a number of species for me, and also to Mr. F. P. Mennell, the Curator of the Rhodesia Museum, for much assistance and encouragement.

1. FRANCOLINUS COQUI.

Francolinus coqui Stark & Scl. Birds S. Afr. iv. p. 197.

"Iswempi."

Fairly common throughout the year and breeds here. It begins to pair at the end of October, and lays from four to eight eggs in a slight hollow in the grass.

2. FRANCOLINUS SHELLEYI.

Francolinus shelleyi Ogilvie-Grant, Ibis, 1890, p. 348; Stark & Scl. Birds S. Afr. iv. p. 208.

"Inkwali."

This bird, known locally as the "Redwing," occurs on the granite kopjes at Hillside, three miles from the town. It pairs at the end of October, and half-grown birds may be seen at the beginning of May. It lays from five to ten eggs in a slight hollow in the ground. The covey consists of from three to ten brace.

3. PTERNISTES SWAINSONI.

Pternistes swainsoni Stark & Scl. Birds S. Afr. iv. p. 217.

"Isikwehli."

A common resident. It has no particular breeding-season, and its nests may be found at all times throughout the year. These are formed of grass, and placed under bushes or in the bed of a river. Nine appears to be the full complement of eggs.

4. COTURNIX DELAGORGUII.

Coturnix delagorguei Stark & Scl. Birds S. Afr. iv. p. 224.

Common during the summer months, and sometimes arrives in abnormal numbers.

5. NUMIDA CORONATA.

Numida coronata Stark & Scl. Birds S. Afr. iv. p. 227.

"Itendeli."

This Guinea-fowl is very common a few miles away from Bulawayo, and it is occasionally met with on the Commonage.

6. TURNIX LEPURANA.

Turnix lepurana Stark & Scl. Birds S. Afr. iv. p. 238.

"Ugonqo."

Not uncommon here during the greater part of the year.

7. TURTUR SEMITORQUATUS.

Turtur semitorquatus Stark & Scl. Birds S. Afr. iv. p. 167.

a. ♂. May 11, 1908. "Injeba."

8. TURTUR CAPICOLA.

Turtur capicola Stark & Scl. Birds S. Afr. iv. p. 169.

a. ♂. April 24, 1907. "Icelegwana."
b, c. ♀ ♀. May 18, 1908.

This Dove is extremely common throughout the year, and is quite a pest to the natives when their crops are ripening.

9. TURTUR SENEGALENSIS.

Turtur senegalensis Stark & Scl. Birds S. Afr. iv. p. 172.

a. March 4, 1907. "Ijuba."

This Dove is almost as common as the preceding, and resembles it very much in habits.

10. ŒNA CAPENSIS.

Œna capensis Stark & Scl. Birds S. Afr. iv. p. 174.

"Umjova" and "Umkombazana."

A common resident. It is very tame, and may often be seen walking about on the gravel paths in gardens.

11. CREX PRATENSIS.

Crex pratensis Stark & Scl. Birds S. Afr. iv. p. 246.

Rather plentiful during its winter stay.

12. GALLINULA ANGULATA.

Gallinula angulata Stark & Scl. Birds S. Afr. iv. p. 264.

a. ♀. Jan. 11, 1902.

**b*. ♂. Dec. 15, 1907.

Specimen *a* was taken with a nest and five eggs. The latter are creamy white with numerous pin-point spots and a few larger spots, all of chocolate-colour.

13. FULICA CRISTATA.

Fulica cristata Stark & Scl. Birds S. Afr. iv. p. 270.

a. July 8, 1907.

14. PODICIPES CAPENSIS.

Podiceps capensis Stark & Scl. Birds S. Afr. iv. p. 513.

a. ♂. Sept. 1, 1907.

15. STEPHANIBYX CORONATUS.

Stephanibyx coronatus Stark & Scl. Birds S. Afr. iv. p. 355.

Rather uncommon close to the town, although I saw a flock of about a dozen individuals on the road one evening towards the end of June. They rose with a whistling cry.

16. CURSORIUS TEMMINCKI.

Cursorius temmincki Stark & Scl. Birds S. Afr. iv. p. 325.

a. ♀. June 1, 1907.
**b*. ♂. June 10, 1908.

17. RHINOPTILUS CHALCOPTERUS.

Rhinoptilus chalcopterus Stark & Scl. Birds S. Afr. iv. p. 329.

**a*. ♀. Nov. 26, 1907.

18. ŒDICNEMUS CAPENSIS.

Œdicnemus capensis Stark & Scl. Birds S. Afr. iv. p. 315.

a. ♀. July 17, 1908.

19. GLAREOLA MELANOPTERA.

Glareola melanoptera Stark & Scl. Birds S. Afr. iv. p. 333.

a. Jan. 11, 1908.

This example is moulting into the adult plumage, but it still shews traces of that of the young bird.

20. LOPHOTIS RUFICRISTA.

Otis ruficrista Stark & Scl. Birds S. Afr. iv. p. 290.

"Umswiliswili."

Occasionally occurs close to the town.

21. EUPODOTIS KORI.

Otis kori Stark & Scl. Birds S. Afr. iv. p. 308.

"Ichemi."

This Bustard occasionally approaches very close to the town and has several times been seen on the Commonage.

22. CICONIA ALBA.

Ciconia alba Stark & Scl. Birds S. Afr. iv. p. 37.

**a*. ♀. Dec. 8, 1907. "Ingabezane."

The White Stork appears in large flocks during the rains.

23. SCOPUS UMBRETTA.

Scopus umbretta Stark & Scl. Birds S. Afr. iv. p. 51.

a. ♀. Sept. 24, 1907. "Tegwane."

This individual had a nest in a high tree close to the water's edge at the Waterworks reservoirs. It was of the usual type—a huge mass of sticks, with an entrance-hole on one side. The bird has also been seen in the very heart of the town.

24. LEPTOPTILUS CRUMENIFERUS.

Leptoptilus crumeniferus Stark & Scl. Birds S. Afr. iv. p. 46.

Three examples were seen near the town on Feb. 5, 1908, one of which was shot by Mr. R. Douglas.

25. NYCTICORAX GRISEUS.

Nycticorax griseus Stark & Scl. Birds S. Afr. iv. p. 82.

a. Juv. July 21, 1907.

26. BUTORIDES ATRICAPILLA.

Butorides atricapilla Stark & Scl. Birds S. Afr. iv. p. 80.

a. ♂. Nov. 25, 1907.

b. ♂. June 9, 1908.

27. ARDETTA PAYESI.

Ardetta payesi Stark & Scl. Birds S. Afr. iv. p. 86.

a. ♀. Jan. 11, 1908.

28. DENDROCYCNA VIDUATA.

Dendrocygna viduata Stark & Scl. Birds S. Afr. iv. p. 124.

a. ♂. April 1, 1908. "Idada."
b. ♀. " "

29. PHALACROCORAX AFRICANUS.

Phalacrocorax africanus Stark & Scl. Birds S. Afr. iv. p. 9.

I have seen this bird several times at the Waterworks.

30. PLOTUS RUFUS.

Plotus rufus Stark & Scl. Birds S. Afr. iv. p. 13.

**a.* ♀. Feb. 29, 1908.

This specimen was shot while in company with one other at the Waterworks.

31. SERPENTARIUS SECRETARIUS.

Serpentarius secretarius Stark & Scl. Birds S. Afr. iii. p. 402.

"Udwai."

Occasionally seen near the town, usually in pairs. A nest was found about four miles east of Bulawayo on July 20, 1908. It was a loose platform of sticks, about twenty feet from the ground, in a tree known to the natives as "umlaladwai" (literally, "the sleeping-place of the Secretary Bird"). In the nest were the remains of a large snake and a pellet of fur; while on the ground beneath were found the skulls of a wild cat and a meerkat with numerous bones of hares. I examined the stomach of a female that had been shot as it left the nest and found therein bones and fur of mice, a large lizard and several small ones, and also a quantity of locusts.

32. GYPS KOLBII.

Gyps kolbii Stark & Scl. Birds S. Afr. iii. p. 383.

"Ilinqi."

I saw a number of what I took to be these birds feeding on the carcase of a horse on the Commonage in March 1907.

33. Melierax gabar.

Melierax gabar Stark & Scl. Birds S. Afr. iii. p. 364.

a. ♀. May 19, 1907.

**b.* ♀. March 2, 1908.

34. Aquila rapax.

Aquila rapax Stark & Scl. Birds S. Afr. iv. p. 294.

a. ♀. July 2, 1908.

This female was shot at the nest, which was a huge structure of branches and twigs formed on the top of a thorn-tree (*Acacia nigrescens*) about forty feet from the ground. When I visited it on the following day, the male had taken the place of his (late) mate on the nest. It contained one "oval" egg, white with very indistinct blotches of grey. This Eagle preys chiefly on hares, of which there were numerous remains on the ground below the nest.

35. Aquila wahlbergi.

Aquila wahlbergi Sundev. Œfvers. K. Vet.-Akad. Handl. Stockh. 1850, p. 109 (1851); Stark & Scl. Birds S. Afr. iii. p. 296.

a. ♀. Sept. 22, 1907.

b. ♂. Nov. 20, 1907.

36. Eutolmaëtus pennatus.

Eutolmaëtus pennatus Stark & Scl. Birds S. Afr. iii. p. 298.

a. Oct. 30, 1907.

b. ♂. Nov. 15, 1907.

37. Spizaëtus bellicosus.

Eutolmaëtus bellicosus Stark & Scl. Birds S. Afr. iii. p. 301.

a. April 13, 1908. "Ukozi."

b. ♂. April 21, 1908.

38. Helotarsus ecaudatus.

Helotarsus ecaudatus Stark & Scl. Birds S. Afr. iii. p. 314.

"Inqunqulu."

I frequently see this bird sailing overhead near the town. Its head always appears to me to be directed vertically downwards as it scans the ground immediately below, and not bent backwards along the breast, as is stated to be the case by Millais in his 'Breath from the Veldt."

39. MILVUS ÆGYPTIUS.

Milvus ægyptius Stark & Scl. Birds S. Afr. iii. p. 336.

a. Nov. 28, 1907. "Umzwazwa."

b. Nov. 28, 1907.

These two birds were shot from among numbers that were following swarms of locusts.

40. FALCO BIARMICUS.

Falco biarmicus Stark & Scl. Birds S. Afr. iii. p. 269.

a. ♂. Oct. 1, 1907. "Uhelwani."

41. TINNUNCULUS RUPICOLA.

Tinnunculus rupicolus Stark & Scl. Birds S. Afr. iii. p. 276.

**a*. ♀. March 5, 1908.

**b*. ♀. " "

42. BUBO MACULOSUS.

Bubo maculosus Stark & Scl. Birds S. Afr. iii. p. 249.

a. ♂. "Isikova," a name applied to all, except the very small, Owls.

b. Oct. 15, 1907.

This Owl makes its appearance just after sunset. I frequently see it in the twilight, perched on the tops of trees. When thus sitting, its horns are erected perpendicularly or, if anything, slightly inclined inwards, and it is evidently on the alert for the slightest rustle among the grass below. During the day it usually sits among the branches of a thick tree, but sometimes rests in the long grass. Its cry is a double hoot, consisting of two different notes slurred together.

43. BUBO LACTEUS.

Bubo lacteus Stark & Scl. Birds S. Afr. iii. p. 252.

Not uncommon. Its loud booming hoot is frequently heard in the evening.

44. Scops capensis.

Scops capensis Stark & Scl. Birds S. Afr. iii. p. 254.

a. ♂. May 31, 1908.

Rare; this is the only example of this Owl that I have met with. Locusts and other insects were in the stomach.

45. Scops leucotis.

Asio leucotis Stark & Scl. Birds S. Afr. iii. p. 243.

There is a dilapidated skin belonging to this species in the collection. It was obtained near the town some few years ago.

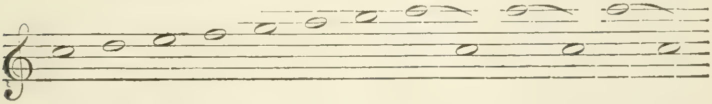
46. Glaucidium perlatum.

Glaucidium perlatum Stark & Scl. Birds S. Afr. iii. p. 257.

a. ♂. May 26, 1908. "Umandugulu."

Not at all uncommon.

The stomach of this specimen was full of large white caterpillars. The note of this little Owl is remarkable, and is frequently heard just after sunset; although I have listened to it early in the afternoon. It consists of an ascent of the octave in clear distinct notes and then a slurred descent in one prolonged note. It may be represented thus:—



47. Strix flammea.

Strix flammea Stark & Scl. Birds S. Afr. iii. p. 237.

a. ♂. June 22, 1907.

b. —. " "

c. ♀. " "

Common; often found in the disused mine-shafts on the Commonage.

48. Pœocephalus transvaalensis.

Poicephalus meyeri transvaalensis Neum. Ornith. Monatsb vii. p. 25 (1899).

Pœocephalus meyeri Stark & Scl. Birds S. Afr. iii. p. 487.

a. Sept. 30, 1907.

**b.* ♀. Dec. 25, 1907.

49. Coracias garrulus.

Coracias garrula Stark & Scl. Birds S. Afr. iii. p. 46.

Specimens were obtained in January, February, and March.

50. Coracias caudatus.

Coracias caudatus Stark & Scl. Birds S. Afr. iii. p. 48.

**a*. May 6, 1908. "Ifefe."

**b*. May 10, 1908.

Common.

51. Coracias olivaceiceps.

Coracias olivaceiceps Sharpe, Cat. B. M. xvii. p. 25 (1892).

Coracias mossambicus Stark & Scl. Birds S. Afr. iii. p. 51.

a. ♀. May 7, 1908. "Itjegela."

By no means rare, though much less common than the preceding species. The stomach of an example examined was full of locusts.

52. Ceryle rudis.

Ceryle rudis Stark & Scl. Birds S. Afr. iii. p. 73.

A pair of these birds may generally be seen on the lower reservoir at the Waterworks. I have observed them fishing in their characteristic manner—hovering Hawk-like at some distance from the water, and suddenly darting down upon their piscine victims.

53. Ceryle maxima.

Ceryle maxima Stark & Scl. Birds S. Afr. iii. p. 76.

a. Aug. 21, 1905.

b. Dec. 2, 1907.

54. Corythornis cyanostigma.

Corythornis cyanostigma Stark & Scl. Birds S. Afr. iii. p. 81.

a. April 15, 1907.

b. June 6, 1907.

Common; to be seen along every river and stream.

55. HALCYON ALBIVENTRIS.

Halcyon albiventris Stark & Scl. Birds S. Afr. iii. p. 86.

a. ♀. Nov. 22, 1907.

The stomach of this individual contained the remains of crabs.

56. LOPHOCEROS EPIRHINUS.

Lophoceros epirhinus Stark & Scl. Birds S. Afr. iii. p. 114.

a. ♂. July 14, 1907. "Igoro."

Fairly common; seen singly and also in parties.

57. LOPHOCEROS LEUCOMELAS.

Lophoceros leucomelas Stark & Scl. Birds S. Afr. iii. p. 118.

a. ♂. May 6, 1907. "Igoro."

This, like the preceding species, is frequently met with on the Commonage.

58. UPUPA AFRICANA.

Upupa africana Stark & Scl. Birds S. Afr. iii. p. 10.

**a.* ♂. Jan. 4, 1908.
b. ♂. April 24, 1908.

Not uncommon, and appears to have been rather more plentiful during the last few months—March, April, May, and June. As a rule it is solitary, though sometimes two are met with together; but I have never seen it in flocks. It is certainly a shy bird and difficult to approach.

59. IRRISOR VIRIDIS.

Irrisor viridis Stark & Scl. Birds S. Afr. iii. p. 14.

I saw two examples of this beautiful species on May 23rd; they flew across the road in front of me as I was cycling into town. Since then I have seen it on two or three occasions. The flight is rather heavy and slow, but even—the tails being carried almost horizontally.

60. MELITTOPHAGUS MERIDIONALIS.

Melittophagus meridionalis Stark & Scl. Birds S. Afr. iii. p. 67.

a. ♀. Aug. 10, 1907.
**b.* ♀. Feb. 29, 1908.

61. Merops apiaster.

Merops apiaster Stark & Scl. Birds S. Afr. iii. p. 57.

a. ♂. March 23, 1907. "Inkonjane inkulu" (=large Swallow).

**b.* ♀. Nov. 24, 1907.

**c.* ♀. " "

**d.* ♀. Feb. 29, 1908.

Very common during its stay here, from the middle of October to the beginning of April.

62. Merops natalensis.

Merops natalensis Reichenb. Handb. Merop. p. 78, pl. 451 (1852).

Merops nubicoides Stark & Scl. Birds S. Afr. iii. p. 62.

a. Nov. 15, 1907.

b. Nov. 22, 1907.

Numbers of these birds were seen at the Umguza River, three or four miles from town, on several occasions during last November.

63. Cosmetornis vexillarius.

Cosmetornis vexillarius Stark & Scl. Birds S. Afr. iii. p. 42.

**a.* ♂. Nov. 24, 1907. "Inabanaba," applied to all Nightjars.

64. Caprimulgus rufigena.

Caprimulgus rufigena Stark & Scl. Birds S. Afr. iii. p. 34.

a. ♂. Nov. 23, 1907.

65. Caprimulgus fossii.

Caprimulgus fossei Stark & Scl. Birds S. Afr. iii. p. 39.

a. ♀. March 5, 1907.

I believe that this is our commonest Nightjar. It is found squatting on the ground at night-time, while during the day it may often be flushed in thick grass.

66. Colius erythromelon.

Colius erythromelon Stark & Scl. Birds S. Afr. iii. p. 99. "Isogonono."

This, the only species of the genus occurring here, is rather common. It is usually seen flying in parties of from six to twelve. Its flight is very steady and even, but not particularly rapid, as has been stated by one author. The tail during flight is usually carried at an angle of about 45° to the horizontal.

It has been pointed out to me that a party of these birds always roosts in the same tree, night after night. It is a thorn-tree (*Acacia horrida*).

A young example, although apparently in the ordinary adult plumage, except for its short tail (5·75 inches), had the bill grey; the cere and bare skin round the eye greyish.

67. SCHIZORHIS CONCOLOR.

Schizorhis concolor Stark & Scl. Birds S. Afr. iii. p. 219

"Umguwe."

The "Go-away bird," as it is called, is fairly common, and often to be seen perched on the topmost branches of trees, uttering its well-known cry, which has suggested both the English and native names.

68. CENTROPUS SENEGALENSIS.

Centropus senegalensis Stark & Scl. Birds S. Afr. iii. p. 206.

**a.* ♂. Nov. 9, 1907.

Iris reddish orange; legs and bill black.

This species has only once been previously recorded from South Africa. It was obtained by Buckley at Bamangwato, Bechuanaland, in 1874.

69. COCCYSTES SERRATUS.

Coccystes serratus Stark & Scl. Birds S. Afr. iii. p. 199.

a. ♂. Nov. 20, 1907.

**b.* March 22, 1908.

This species appears never to have been recorded from Southern Rhodesia before.

70. COCCYSTES HYPOPINARIUS.

Coccystes hypopinarius Stark & Scl. Birds S. Afr. iii. p. 197.

a. ♂. Nov. 20, 1907. "Inkanku."
b. ♀. " "

Not uncommon during the rainy season. In addition to its loud whistle-like call, it has a low cackling cry which is said by the natives to portend heavy rain.

71. COCCYSTES JACOBINUS.

Coccystes jacobinus Stark & Scl. Birds S. Afr. iii. p. 195.

**a.* ♂. Nov. 9, 1907.

72. LYBIUS TORQUATUS.

Lybius torquatus Stark & Scl. Birds S. Afr. iii. p. 157.

a. March 1, 1907. "Isiqoqoto," a name applied to Barbets and Woodpeckers.

b. ♂. April 30, 1908.

73. TRICHOLÆMA LEUCOMELAS.

Tricholæma leucomelas Stark & Scl. Birds S. Afr. iii. p. 160.

"Isiqoqoto."

Very common. A nest of this species was found at Belle Vue on Feb. 17th, 1908. It was simply a circular hole in the trunk of a tree without lining-materials, and contained four young.

74. BARBATULA EXTONI.

Barbatula extoni Stark & Scl. Birds S. Afr. iii. p. 168.

**a.* ♂. Feb. 29, 1908.
**b.* ♀. " "

75. TRACHYPHONUS CAFER.

Trachyphonus cafer Stark & Scl. Birds S. Afr. iii. p. 170.

a. ♀. July 6, 1907.

76. THRIPIAS NAMAQUUS.

Thripias namaquus Stark & Scl. Birds S. Afr. iii. p. 138.

a. ♂. June 18, 1908. "Isiqoqoto."

Fairly common. This example was caught in a recently bored hole in the trunk of the common thorn-bush (*Acacia horrida*). Its testes were very much enlarged, and looked as though the bird was about to breed.

77. DENDROPICUS CARDINALIS.

Dendropicus cardinalis Stark & Scl. Birds S. Afr. iii. p. 135.

a. ♂. Sept. 24, 1907. "Isiqoqoto."

This example appeared to be nesting; it was shot as it entered a hole in a branch of an *Euphorbia* tree.

78. CHELIDON URBICA.

Chelidon urbica Stark & Scl. Birds S. Africa, ii. p. 278.

Two examples of the House-Martin were shot on April 7th, 1908, at the Waterworks, three miles from town. They were with a flock of Swallows at the time.

79. HIRUNDO RUSTICA.

Hirundo rustica Stark & Scl. Birds S. Afr. ii. p. 289.

a. ♂. March 9, 1907. "Inkonjane."

b. March 9, 1907.

c. ♀. Feb. 17, 1908.

The Common Swallow began to arrive here about the middle of October, and the greater number of them left again about the beginning of April, although a few were seen as late as April 27th and 28th.

80. HIRUNDO SEMIRUFA.

Hirundo semirufa Stark & Scl. Birds S. Afr. ii. p. 301.

I saw several examples of this species flying over a reservoir at the Waterworks on Jan. 5th last. Their flight is very different from that of the Common Swallow (*H. rustica*), and they reminded me rather of Bee-eaters on the wing.

81. BRADYORNIS MARIQUENSIS.

Bradyornis mariquensis Stark & Scl. Birds S. Afr. ii. p. 238.

a. ♂. May 2, 1908.

b. May 13, 1908.

c. ♂. May 15, 1908.

82. MUSCICAPA GRISOLA.

Muscicapa grisola Stark & Scl. Birds S. Afr. ii. p. 240.

a. Jan. 11, 1908.

The Spotted Flycatcher arrived here at the beginning of November last summer, and did considerable damage to the grapes in the gardens during its stay.

83. Parisoma subcœruleum.

Parisoma subcœruleum Stark & Scl. Birds S. Afr. ii. p. 75.

**a.* ♀. Nov. 16, 1907.
**b.* ♂. Dec. 4, 1907.
c. ♀. Jan. 28, 1908.
d. Feb. 3, 1908.

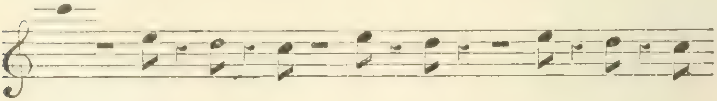
Specimens were obtained in November, December, January, and February.

84. Batis molitor.

Pachyprora molitor Stark & Scl. Birds S. Afr. ii. p. 255.

"Ishlutu."

By no means uncommon. Generally seen sitting on or hunting among the branches of bushes, where its characteristic cry is frequently heard. This is ably described by Capt. Boyd Alexander thus: "a clear flute-like note in a high key being first uttered, followed in succession by three others, each descending a tone in scale, the rendering of which is very true, while between the notes a distinct interval is made." I find, however, that it sometimes misses one or two of the triple notes. In music this cry would be rendered as follows:—



85. Pycnonotus layardi.

Pycnonotus layardi Stark & Scl. Birds S. Afr. ii. p. 63.

"Igwiko" and "Isigwenula."

An extremely common resident; breeding with us.

86. Turdus litsitsirupa.

Turdus litsitsirupa Stark & Scl. Birds S. Afr. ii. p. 173.

**a.* ♀. Feb. 22, 1908.

87. ERYTHROPYGIA LEUCOPHRYS.

Erythropygia leucophrys Stark & Scl. Birds S. Afr. ii. p. 225.

a. ♀. Jan. 12, 1908.

88. ERYTHROPYGIA PŒNA.

Erythropygia pœna Stark & Scl. Birds S. Afr. ii. p. 223.

**a.* ♂. Nov. 22, 1907.

89. ERYTHROPYGIA ZAMBESIANA.

Erythropygia zambesiana Stark & Scl. Birds S. Afr. ii. p. 224.

Termites were found in the stomachs of two examples examined.

90. SAXICOLA FAMILIARIS.

Saxicola familiaris Stark & Scl. Birds S. Afr. ii. p. 201.

a. ♂. March 22, 1907.
b. ♂. May 5, 1907.
c. ♂. Jan. 28, 1908.

91. CAMPICOLA PILEATA.

Saxicola pileata Stark & Scl. Birds S. Afr. ii. p. 196.

a. ♂. Feb. 15, 1908. "Umgawana."
b. ♂. April 27, 1908.
c. ♀. June 2, 1908.

A very common and familiar bird in and around Bulawayo. It may often be seen in the roads, especially during the winter months, or seated on the fences and telegraph-wires. When upon the ground it often stands bolt upright, looking very stately, and all the while jerking its wings and tail. It is by no means shy; on the contrary, it will not attempt to fly away until one gets within two or three feet of it, and then it only flies a short distance and settles again. Its coloration renders it very inconspicuous on the dark red schist soil of Bulawayo. I once saw a Drongo (*Dicrurus afer*) chasing one of these birds, and the Wheatear was uttering most pitiful cries.

92. CISTICOLA RUFICAPILLA.

Cisticola ruficapilla Smith, Ill. Zool. S. Afr., Aves, pl. 73. fig. 1 (1842).

Cisticola aberrans Stark & Scl. Birds S. Afr. ii. p. 143.

a. March 4, 1907.

I took a nest of this species at Belle Vue on Feb. 20th, 1908. It contained three pale blue eggs finely spotted with light red, measuring 15·5 × 12 mm. The nest was cup-shaped and circular ($2\frac{1}{2}''$ internal diameter) and built of soft grass-blades lined with fine vegetable hair. It was situated in tall grass.

93. CISTICOLA SUBRUFICAPILLA.

Cisticola subruficapilla Stark & Scl. Birds S. Afr. ii. p. 151.

Ants were found in the stomach of one specimen examined. Another was shot as it flew from the nest. This was situated in a tuft of thick grass on the ground and contained one egg and two young. The egg was transparent white with purplish-brown spots, thickest at the larger end. It measures 19 × 8 mm. The nest was cup-shaped and formed of woven grass, bound together and lined with silky down from plants.

94. SYLVIA CINEREA.

Sylvia cinerea Stark & Scl. Birds S. Afr. ii. p. 81.

a. ♀. Feb. 15, 1908 (in full moult).

The Whitethroat appears to have been only once previously recorded from South Africa. It was obtained at Otniovapa in Damaraland by Andersson on January 12, 1867.

95. PHYLLOSCOPUS TROCHILUS.

Phylloscopus trochilus Stark & Scl. Birds S. Afr. ii. p. 84.

a. March 22, 1908.

96. DRYODROMAS FULVICAPILLA.

Cisticola fulvicapilla Stark & Scl. Birds S. Afr. ii. p. 141.

a. Jan. 8, 1908. "Umdonya."

I took a nest of this bird, which is a plentiful resident, on March 14, 1908. It was situated in the fork of a low bush about one foot from the ground, and contained three eggs of a very pale blue colour with minute spots of reddish brown, thicker at one end. They measured 16 × 11·5 mm. The nest was composed of soft grass and woolly seeds of plants, and formed a deep cup-shaped structure.

97. SYLVIELLA RUFESCENS.

Sylviella rufescens Stark & Scl. Birds S. Afr. ii. p. 115.

Common. Usually found in the thickest trees, where it hunts up and down the trunk or among the branches in a very active manner. Frequents gardens occasionally.

98. EREMOMELA POLIOXANTHA.

Eremomela polioxantha Stark & Scl. Birds S. Afr. ii. p. 108.

**a.* ♂. Nov. 16, 1907.
b. ♀. March 22, 1908.
c. ♀. June 9, 1908.

This species is by no means uncommon here. I have seen it flying in small parties from bush to bush. It resembles *Sylviella rufescens* in habits.

99. CAMAROPTERA SUNDEVALLI.

Camaroptera sundevalli Stark & Scl. Birds S. Afr. ii. p. 113.

a. ♀. Dec. 26, 1907.

I found a nest of this species on December 26, 1907. It contained two transparent white eggs with faint brownish plum-coloured blotches. The eggs measured 18 × 12 mm. The nest was a purse-shaped structure of very fine grass, bound together and attached by fine silk vegetable fibres to the leaves and stems of a nettle-like plant. It was about eighteen inches from the ground. The female was shot as it flew from the nest.

100. PRINIA FLAVICANS.

Prinia flavicans Stark & Scl. Birds S. Afr. ii. p. 136.

"Uboiyana."

A nest of this bird taken at Belle Vue Farm on March 1, 1908, contained two eggs. The nest was purse-shaped, domed, with an entrance at the side, and composed of fine grasspeelings, curled, twisted, and woven together. It was situated in the fork of a tree about three and a half feet from the ground. The eggs were of a pale bluish-green colour, with spots, blotches, and scribblings of chocolate and paler brown. They measured 16×12 mm.

101. PRINIA MYSTACEA.

Prinia mystacea Stark & Scl. Birds S. Afr. ii. p. 135.

a. ♂. May 2, 1907.

102. EUROCEPHALUS ANGUITIMENS.

Eurocephalus anguitimens Stark & Scl. Birds S. Afr. ii. p. 13.

**a.* ♀. Jan. 26, 1908.
b. ♀. May 17, 1908.

Rare. The stomach of specimen *b* contained remains of beetles.

103. PRIONOPS TALACOMA.

Prionops talacoma Stark & Scl. Birds S. Afr. ii. p. 51.

a. ♂. May 5, 1907. "Ihlolanyama."
b. ♀. May 27, 1908.

Fairly common. Always seen in parties of from ten to twenty or twenty-five. It is very difficult to get within gunshot-range of these birds; they settle on low bushes, and before one can get close enough to them they fly on a short distance ahead and settle again. I wasted about an hour one day trying to get a shot at a flock. On the other hand, they are also very bold, as the following incident will shew:—A few weeks ago a man happened to wound one of a party of these birds, and the cries it made as he carried it in his hand brought the other members of the flock to the rescue. One of them actually flew at him and pecked his cap.

104. LANIUS MINOR.

Lanius minor Stark & Scl. Birds S. Afr. ii. p. 9.

Specimens were obtained in November 1907.

105. LANIUS SUBCORONATUS.

Lanius subcoronatus Stark & Scl. Birds S. Afr. ii. p. 9.

a. ♀. Feb. 8, 1908.

It is almost impossible to distinguish between this and the succeeding species in the wild state; but individuals belonging to one of them, or perhaps both, may often be seen perched on the telegraph-wires or on the tops of bushes.

106. Lanius collaris.

Lanius collaris Stark & Scl. Birds S. Afr. ii. p. 6.

Not uncommon. The stomach of one contained a number of large spiders.

107. Lanius collurio.

Lanius collurio Stark & Scl. Birds S. Afr. ii. p. 11.

"Ukonchalakoncha."

Extremely common from November to March. Generally seen perched in a very conspicuous position on a thorn-bush. I saw a nest of this species near Bulawayo on January 29th. It was built in a thorn-tree about 4 feet from the ground and contained three white eggs with small black markings.

108. Chlorophoneus chrysogaster.

Laniarius sulphureipectus Stark & Scl. Birds S. Afr. ii. p. 40.

a. ♂. June 8, 1908.

Rare. Caterpillars and remains of large ants in its stomach.

109. Laniarius guttatus (Hartl.).

Dryoscopus guttatus Stark & Scl. Birds S. Afr. ii. p. 28.

a. ♂. May 2, 1908.
b. ♂. May 3, 1908.
c. May 10, 1908.

Uncommon.

110. Laniarius atrococcineus.

Laniarius atrococcineus Stark & Scl. Birds S. Afr. ii. p. 31.

Not uncommon, but shy and seldom seen. Its bright red underparts render it a very conspicuous object in the bush. Occasionally it descends to the ground to feed: one was shot while feeding among thick grass on the ground, and in its stomach were found ants, beetles, and caterpillars.

111. Telephonus senegalus.

Telephonus senegalus Stark & Scl. Birds S. Afr. ii. p. 19.

"Umgubane."

A fairly common resident. It may often be disturbed while feeding on the ground. It then flies off to the nearest bush with its tail widely spread and the subterminal band of white shewing very conspicuously. Its legs are pale grey, as stated by Marshall.

Two nests taken near Bulawayo on December 9th were each formed of fine twigs wound round into a neat shallow cup, having an internal diameter of about 3½ inches. They were resting on the horizontal branches of bushes and only two or three feet off the ground. These nests contained two and three eggs respectively. They are white with small chocolate-coloured splashes and blotches, and measure 24 × 18·5 mm.

A nest found on January 2 contained two chicks.

112. Telephonus australis.

Telephonus australis Stark & Scl. Birds S. Afr. ii. p. 22.

"Umgubane."

Bill black: legs and feet pale grey; iris silvery white or a very light grey. Like the preceding species, a common resident. Its habits are also very similar to those of *T. senegalus*. A nest containing two eggs was taken on December 26. It was almost identical in construction and position with those of its ally. The eggs, again, only differ in being slightly smaller.

113. Nilaus brubru.

Nilaus brubru Stark & Scl. Birds S. Afr. ii. p. 16.

a. ♀. May 30, 1908.

Rare. Locusts and grasshoppers in the stomach.

114. Parus afer.

Parus afer Stark, Birds S. Afr. i. p. 305.

Not frequently met with.

115. Cinnyris mariquensis.

Cinnyris mariquensis Stark, Birds S. Afr. i. p. 279.

"Intjenwana," a name used for all the Sun-birds.

Very common, perhaps the commonest of our Sun-birds. This species, with *C. chalybeus* and *Chalcomitra gutturalis*, frequents gardens in the town and suburbs, attracted by the flowers.

116. CINNYRIS CHALYBEUS.

Cinnyris chalybeus Stark, Birds S. Afr. i. p. 284.

Very common. This species, with *C. mariquensis* and *Chalcomitra gutturalis*, seems to be more numerous and active during April and May. They appear to be partial to the wild mistletoe, which grows on a number of trees on the Commonage.

117. CHALCOMITRA GUTTURALIS.

Cinnyris gutturalis Stark, Birds S. Afr. i. p. 286.

a. ♂ imm. May 10, 1907.

b. ♂. April 14, 1908.

Common, though not quite so numerous as *Cinnyris mariquensis* and *C. chalybeus.*

The plumage of *a* is very similar to that of the adult female, except that the scarlet breast of the adult male is present.

118. CINNYRIS LEUCOGASTER.

Cinnyris leucogaster Stark, Birds S. Afr. i. p. 281.

a. ♂. May 5, 1907.

Uncommon. I saw one on June 1 at Belle Vue. It was hopping briskly among the branches of some thick bushes and uttering a subdued *tweet-tweet* all the while.

119. ZOSTEROPS ANDERSSONI.

Zosterops anderssoni Stark, Birds S. Afr. i. p. 300.

a. ♂. June 29, 1907.

Rare. The only example seen.

120. MOTACILLA CAPENSIS.

Motacilla capensis Stark, Birds S. Afr. i. p. 259.

a. ♂. June 8, 1908. "Umvemve."

Rare. I have only seen this species once or twice, and each time it was close to water. Ants were found in the stomach of this example.

121. Anthus trivialis.

Anthus trivialis Stark, Birds S. Afr. i. p. 247.

a. ♀. Feb. 18, 1908.

122. Anthus rufulus.

Anthus rufulus Stark, Birds S. Afr. i. p. 251.

"Umncelu."

This Pipit is extremely common, and is found feeding on all the roads in and around the town. Its coloration then renders it almost invisible, and the bird seems to be conscious of this means of protection, for it does not attempt to fly away until one is within a few feet of it, and even then it generally runs off in a crouching manner and takes refuge in the grass at the sides of the road.

123. Anthus pyrrhonotus.

Anthus pyrrhonotus Stark, Birds S. Afr. i. p. 250.

a. ♀. Feb. 9, 1908.

This example is just attaining the adult plumage, and still shews remains of the young dress.

124. Anthus vaalensis.

Anthus vaalensis Shelley, Birds Afr. ii. p. 311 (1900).

a. ♀. May 2, 1907.

125. Mirafra sabota.

Mirafra sabota Stark, Birds S. Afr. i. p. 208.

Examples have been obtained in January, February, May, and July.

126. Mirafra africana.

Mirafra africana Stark & Scl. Birds S. Afr. i. p. 212.

"Indayila"

This species is not uncommon during the winter months, when it may be seen feeding in the roads, always singly.

127. Mirafra nigricans.

Mirafra africans Stark, Birds S. Afr. i. p. 207.

a. ♀. Jan. 5, 1908.

b. ♀. Feb. 10, 1908.

These examples are in their first year's plumage. So far as I am aware, this species has not been previously recorded in Southern Rhodesia.

128. PYRRHULAUDA SMITHI.

Pyrrhulauda smithii Stark, Birds S. Afr. i. p. 196.

Very common, especially during the winter months, when it may be seen feeding in numbers in the streets—reminding one of the Common English Sparrow (*Passer domesticus*) in its ways.

129. POLIOSPIZA ANGOLENSIS.

Serinus angolensis Stark, Birds S. Afr. i. p. 178.

"Intagane."

A common bird throughout the year. Small seeds were found in the stomach of one that I examined. A female was shot as it flew from the nest, which was a shallow cup-shaped structure of fine twigs bound together with hair and wool, and attached to a horizontal branch of a Syringa-tree about six feet from the ground. The nest measures two inches internal diameter. It contained three white eggs with very fine indistinct pale brown markings, measuring 17 × 12·5 mm.

130. POLIOSPIZA GULARIS.

Poliospiza gularis Stark, Birds S. Afr. i. p. 165.

Often found in company with *Serinus sulphuratus*. They are both very partial to the seeds of the sunflower.

131. SERINUS SULPHURATUS.

Serinus sulphuratus Stark, Birds S. Afr. i. p. 169.

a. ♂. April 10, 1908.

This species is common in and near Bulawayo, although I have not been able to shoot one up to the present. The only example in the Museum collection lived for some time in captivity.

132. SERINUS ICTERUS.

Serinus icterus Stark, Birds S. Afr. i. p. 173.

**a.* ♀. Sept. 8, 1907.
**b.* ♀. Nov. 22, 1907.

133. SERINUS SHELLEYI.

Serinus shelleyi, Neumann, Orn. Monatsb. xi. p. 184 (1903).

a. ♀. July 28, 1907.

134. EMBERIZA FLAVIVENTRIS.

Emberiza flaviventris Stark, Birds S. Afr. i. p. 184.

Not uncommon.

135. FRINGILLARIA TAHAPISI.

Fringillaria tahapisi Stark, Birds S. Afr. i. p. 189.

**a.* ♀. Nov. 26, 1907.

136. HYPOCHERA FUNEREA.

Hypochera funerea Stark, Birds S. Afr. i. p. 153.

**a.* ♂. Dec. 9, 1907.
b. ♂. Jan. 12, 1908.
**c.* ♂. Feb. 29, 1908.

Uncommon. *b* was shot in a thorn-bush.

a is in changing plumage; there are some brown feathers on the back and some white ones on the underside intermingled with the black.

Bill white; legs and feet flesh-colour; iris very dark brown. The stomach of *b* contained small seeds.

137. VIDUA PARADISEA.

Vidua paradisea Stark, Birds S. Afr. i. p. 149.

"Umasiyabundu."

A common resident, and like *Tetrænura regia* is in the summer a prominent feature of our bird-life. The males begin to don their bright livery early in November and lose it again in March. One shot on November 25 is already in full dress, except that the long tail-feathers are not yet developed.

During the summer the males are usually met with separately, accompanied by their hosts of females, but occasionally two or three cocks may be seen together, and I once (Jan. 5) saw a flock of about twenty-five males all in full plumage.

Although their diet consists chiefly of small seeds, it is varied sometimes by insects. Mr. Mennell tells me he once saw a number of males and females devouring flying termites as they swarmed from a hole in the ground.

138. VIDUA REGIA.

Vidua regia Stark, Birds S. Afr. i. p. 143.

"Intaga."

Common, and very conspicuous during the breeding-season. The full plumage is assumed during November, and the long tail-feathers are shed again at the beginning of May, otherwise the summer dress persists throughout May until June.

139. VIDUA SERINA.

Vidua principalis Stark, Birds S. Afr. i. p. 145.

Occasionally met with near Bulawayo. I have seen several examples of it in aviaries and have been told that they were caught close to the town.

140. EUPLECTES XANTHOMELAS.

Pyromelana capensis xanthomelæna Stark, Birds S. Afr. i. p. 133.

"Isigwe."

A common resident. The males commence to assume their breeding-plumage at the beginning of November: one of them has some white feathers on the breast and abdomen, and some brown ones on the head and back, interspersed among the black. They must begin to lose their summer garb in March, for I have seen them in full plumage in February, but examples shot on the 18th April, 20th and 25th of May are all in their light brown winter dress, although the yellow on the wing-coverts and rump is still quite bright. Unlike *Pyromelana sundevalli*, this bird usually builds away from water and singly. A nest taken on January 27th was found in tall grass two or three miles from water. It was made of fine grass and formed into a sphere, about 2½ inches internal diameter, with a circular opening on one side. There were three eggs, bluish green in colour with numerous dark brown spots and splashes. They measure 19 × 14 mm.

141. PYROMELANA TAHA.

Pyromelana taha Stark, Birds S. Afr. i. p. 128.

I saw a male of this species, in breeding-plumage, in an aviary on March 30. It had been caught near the town, and is said to have been very common here a few years ago.

142. PYROMELANA SUNDEVALLI.

Pyromelana oryx Stark, Birds S. Afr. i. p. 126.

"Isigwe ubonvu."

Common, noticeably so during the summer. It nests in reeds near water, from the end of November to March; and by the end of April the gorgeous breeding-plumage is entirely lost. There is a colony with some hundred nests near the Waterworks reservoirs. The newly hatched chicks have a pink skin with a few straggly yellow down-feathers.

143. QUELEA QUELEA.

Quelea quelea Stark, Birds S. Afr. i. p. 122.

Very common during the winter, when it congregates in large flocks. I saw one among a colony of *Pyromelana sundevalli* last December.

144. AMADINA ERYTHROCEPHALA.

Amadina erythrocephala Stark, Birds S. Afr. i. p. 118 (1900).

This species is not uncommon, and is often caught for aviaries. I have no knowledge of its breeding here.

145. ZONOGASTRIS MELBA.

Pytelia melba Stark, Birds S. Afr. i. p. 89.

"Uwatwatwayana."

A very common resident. Usually seen in pairs during the summer, but in winter often associating with the flocks of *Sporopipes squamifrons*.

The young male resembles the adult females, except that the barring on the breast and abdomen is only faintly indicated and the wash of olive on the back is much paler.

146. SPOROPIPES SQUAMIFRONS.

Sporopipes squamifrons Stark, Birds S. Afr. i. p. 86.

"Indhlala."

An exceedingly common species throughout the year.

It breeds from October to the end of March, forming a loosely constructed nest of grass-tops, usually placed in thorn-bushes. Its cry is a gentle twit-twit.

147. Ortygospiza polyzona.

Ortygospiza polyzona Stark, Birds S. Afr. i. p. 109.

a. ♂. Aug. 9, 1907.

Uncommon. The upper mandible of this specimen is black and only the lower one is red.

148. Lagonosticta jamesoni.

Lagonosticta jamesoni Stark, Birds S. Afr. i. p. 93.

a. ♂. April 10, 1908.

This species is scarce here. The present example, the only one I have seen, was caught close to the town and lived for some time in captivity. Its tail measures 2·7 inches.

149. Estrilda astrilda.

Estrilda astrilda Stark, Birds S. Afr. i. p. 98.

Fairly common. The only example in our collection was purchased alive.

150. Estrilda erythronota.

Estrilda erythronota Stark, Birds S. Afr. i. p. 100.

a. ♀. May 29, 1907.

b. Aug. 21, 1907.

151. Estrilda angolensis.

Estrilda angolensis Stark, Birds S. Afr. i. p. 102.

“Icecetwana.”

Very common throughout the year. Two nests were taken close to the town, one on January 27th and the other on February 15th. They were similarly constructed of fine grass-tops, loosely put together and lined with a few feathers. They contained four and five pure white eggs respectively.

152. Estrilda subflava.

Estrilda subflava Stark, Birds S. Afr. i. p. 105.

a. ♂. June 26, 1908.

Rare; this is the only example met with.

153. ESTRILDA DUFRESNII.

Estrilda dufresnii Stark, Birds S. Afr. i. p. 107.

a. ♂. March 7, 1908.

Occasionally caught near the town and kept in aviaries. The example in the collection died in captivity.

154. ESTRILDA GRANATINA.

Estrilda granatina Stark, Birds S. Afr. i. p. 104.

"Ikiwane."

A common resident.

155. HYPHANTORNIS CABANISI.

Hyphantornis cabanisi Stark, Birds S. Afr. i. p. 57.

a. ♀. Nov. 29, 1907.
b. ♀. May 16, 1908.

156. HYPHANTORNIS VELATUS.

Hyphantornis velatus Stark, Birds S. Afr. i. p. 58.

**a.* ♂. Nov. 13. "Isikwe."
**b.* ♂. Nov. 18.
**c.* ♂. Nov. 29.

The amount of black on the forehead in these three examples varies considerably. It measures ·1, ·3, and ·6 of an inch respectively. *c* has also much more black on the throat than either of the others.

This bird is common here, noticeably so during the summer, when its nests are to be seen suspended from the ends of the branches of trees, usually the common thorn-bush (*Acacia horrida*). I have also seen them attached to the ends of reeds at the water's edge.

157. ORIOLUS LARVATUS.

Oriolus larvatus Stark, Birds S. Afr. i. p. 51.

a. ♀. July 21, 1907.
b. Aug. 25, 1907.

Seen occasionally throughout the year and always singly.

Bill terra-cotta; legs and feet black; iris crimson.

Large lepidopterous larvæ and remains of locusts were found in the stomach of one I examined.

158. DICRURUS AFER.

Dicrurus afer Stark & Scl. Birds S. Afr. ii. p. 265.

"Intengu."

This bird has been extremely common near the town during the last few months, viz. March, April, May, and June. It is usually seen sitting on projecting branches of trees or bushes, from which it makes short flights after passing insects, generally returning to the same position. It has a variety of different notes.

159. CINNYRICINCLUS VERREAUXI.

Pholidauges leucogaster verreauxi Stark, Birds S. Afr. i. p. 44.

**a*. ♀. Nov. 25, 1907.
b. ♂ yg. Dec. 1907.
c. ♀ yg. Jan. 8, 1908.
d. ♂ imm. May 11, 1908.

Iris narrow yellow. Buds of flowers were found in the stomach of one that I examined. It is not an uncommon species here, especially during the winter months, when it has been seen in parties of about a dozen, consisting chiefly of females or young males, whereas in summer the males are usually seen singly.

a although marked as a female, had several metallic-violet feathers in its plumage.

b shews traces of the appearance of the adult plumage by a few violet feathers on the neck.

d has already assumed the plumage of the mature bird, but the gape is still yellow, an evidence of youth.

160. LAMPROCOLIUS BISPECULARIS.

Lamprocolius phœnicopterus bispecularis Stark, Birds S. Afr. i. p. 39.

a. Bulawayo, ♀. April 24, 1907. "Ikwezi."
b. ,, Aug. 30, 1907.
c. ,, ,, ,,
d. ,, juv. Jan. 10, 1908.

Very common and generally seen in large flocks.

When a flock is feeding on the ground, first one bird and then another will fly a foot or two off the ground and settle again directly. It may be that they are in this way looking out for danger.

They always perch in very prominent positions on trees and for this reason are difficult to approach. I have heard them utter a very subdued continuous wailing cry.

161. CORVULTUR ALBICOLLIS.

Corvultur albicollis Stark, Birds S. Afr. i. p. 10.

"Iwabai l'intaba."

This Crow has been seen flying around the granite kopjes at Hillside. It appears to be confined to the neighbourhood of hills, and more especially those of the granite formations such as we have in the Matopos about 40 miles south of Bulawayo, where I have seen this bird in great numbers.

162. CORVUS SCAPULATUS.

Corvus scapulatus Stark, Birds S. Afr. i. p. 12.

"Iwabai."

An extremely common bird in the town from January to June, but during the rest of the year only a few are seen occasionally. It frequently rests in trees or on the posts supporting the electric-light wires. Its foods consists of scraps of meat or other offal, and I have also seen it hunting for ticks on donkeys' backs. It has a harsh guttural croak.

VII.—*Notices of recent Ornithological Publications.*

1. *Allen on* Bæolophus bicolor-atricristatus.

[The *Bæolophus bicolor-atricristatus* Group. By J. A. Allen. Bull. Am. Mus. N. H. xxiii. p. 467 (1907).]

The Tufted Titmouse of the Eastern United States (*Bæolophus bicolor*) is replaced in Texas and Mexico by the quite distinct species *B. atricristatus*. The breeding-ranges of these two species, as it has recently been discovered, overlap in Southern and Central Texas, where intermediate forms are found and have been described as new subspecies, *Parus atricristatus castaneifrons* and *P. bicolor texensis*. Dr. Allen discusses the true status of these birds at full length, and, after a careful study of all available material, accepts Mr. Ridgway's view that "the birds shewing mixed characters are hybrids" and not "geographical intergrades." A somewhat similar case in the Oriental Region is that of *Coracias indicus* and *C. affinis* (see Blanford, Fauna of Brit. Ind., Birds, iii. p. 106).

2. *Berlepsch on the Birds of Cayenne.*

[On the Birds of Cayenne.—Part II. By Hans, Graf v. Berlepsch. Nov. Zool. xv. p. 201.]

We have now before us the second part of Graf von Berlepsch's excellent memoir on the Birds of Cayenne, of which we have already noticed the first ('Ibis,' 1908, p. 616). In the two parts together 626 species are included. In the second part the author begins with the Trochilidæ, of which he enumerates 38 species as found in Cayenne.

Additions and corrections follow the List, and it is stated in a "Summary" that we may add about 140 more species which, although not yet recorded from Cayenne, are likely to be found there. We are therefore "justified in computing the number of species that belong to that country to be about 766."

"*Penelope granti*" is proposed as a new name for the species of Guan from British Guiana called *P. marail* by Mr. Ogilvie-Grant (Cat. B. xxii. p. 495), the *P. marail* of Gmelin being probably = *P. jacupeba*.

3. *Cheeseman on the Lesser Frigate-bird.*

[Notice of the Occurrence of the Lesser Frigate-bird (*Fregata ariel*) in North Auckland District. By F. F. Cheeseman. Trans. New Zealand Inst. xl. p. 265 (1897).]

In Buller's "Supplement" to his 'Birds of New Zealand' it is stated that there is only one authentic record of the occurrence of *Fregata ariel* in New Zealand. The capture of a second specimen of this bird in the peninsula north of Auckland and various particulars about it are now described by Mr. Cheeseman, the Curator of the Auckland Museum.

4. *Drummond on the Little-Barrier Bird-Sanctuary.*

[The Little-Barrier Bird-Sanctuary. By James Drummond, F.L.S. Trans. New Zealand Inst. xl. 1907.]

After reading Dr. Fulton's lugubrous account of the decadence of the Avifauna of New Zealand (see below, p. 175), it is pleasant to know that some steps have already been taken to alleviate the evil and seem likely to be, to a certain extent, successful. Little Barrier Island in the Gulf of Hauraki (about 10,000 acres in area) has been declared a "Bird-Sanctuary" and no bird on it is allowed to be destroyed, or interfered with in any way. Mr. Drummond spent a fortnight on the island in the beginning of 1907 and gives us a satisfactory account of what he observed. He had only to go "outside his tent to see scores of Bell-birds, Whiteheads, Tuis, Tom-tits, Fan-tails, and other small birds." Many other native birds were observed, and the two migratory Cuckoos are said to arrive and depart at their regular seasons. Altogether some 41 species live and thrive in the island, and the experiment, so far as it goes, is an undoubted success. But we do not see that it will do much to help restocking the main islands with native bird-life.

5. *Flower's List of Zoological Gardens.*

[Zoological Gardens of the World. Reference List, 1st Oct., 1908. Capt. S. S. Flower, Zoological Gardens, Giza, Egypt.]

Capt. Flower has sent us a copy of the new edition of his 'List of the Zoological Gardens of the World,' which we have great pleasure in introducing to the notice of our readers. It is arranged alphabetically under six heads—Africa, America North, America South, Asia, Australia, and Europe. Altogether 80 Gardens are enumerated—4 African (Egypt and the Transvaal); 21 North American, in various States, the best-known being those of Bronx Park, New York, and Philadelphia; 3 in South America (Buenos Ayres, Pará, and Rio); 8 in Asia (British India, Saigon, and

Japan, &c.); 4 in Australia (3 of which have members of the Le Souëf family as Directors); and 40 scattered over Europe, no less than 18 being found in different towns in Germany. As we have often heard said, the establishment of a Zoological Garden is a very fair test of the progress of civilization in every country. We thank Capt. Flower for the trouble he has taken in preparing this useful list. We have already noticed his report on the Zoological Gardens in Europe which he himself visited in 1907 (see 'The Ibis,' 1908, p. 619).

6. *Fulton on the Disappearance of New Zealand Birds.*

[The Disappearance of New Zealand Birds. By Dr. Fulton. Trans. New Zealand Inst. xl. p. 485.]

"Owing to change in environment, alterations in food-supply, and disturbance of the balance of Nature by ridiculous importations of birds and animals," Dr. Fulton tells us, "our beautiful feathered friends are fast going to the wall." He discusses the different groups of Land-birds of New Zealand, and gives ample proofs of this melancholy fact. The Birds of Prey "are now rarely seen," the Tui is "fast disappearing," the Thrush is "very rare," the Native Quail is "absolutely extinct"—such are the sad stories put before us. The same sort of process is, no doubt, going on in all civilized lands, but in New Zealand it is progressing more rapidly.

7. *Godman's 'Monograph of the Petrels.'*

[A Monograph of the Petrels (Order Tubinares). By F. DuCane Godman, D.C.L., F.R.S., President of the British Ornithologists' Union. Part III. September, 1908. Witherby & Co.]

The third part of this important Monograph continues the good work on the system described in our notices of the first and second parts (see 'Ibis,' 1907, p. 515, and 1908, pp. 367, 527). The present part is mainly devoted to the widely spread genus *Œstrelata*, of which 23 species are recognized, and all but two are figured, with "more to come." They are far wanderers, as their name implies, and one of them (*Œ. hæsitata*) has the honour of being included in the British List, on the faith of a single straggler.

8. *Hartert's 'Miscellanea Ornithologica'*: Part V.

[Miscellanea Ornithologica—Critical, Nomenclatorial, and other Notes, mostly on Palæarctic Birds and their Allies. By Dr. E. Hartert. Part V. Nov. Zool. xv. p. 295 (1907).]

Dr. Hartert shews that *Acrocephalus inexpectatus* of Berezowski and Bianchi, from Southern Kansu, is based upon a young specimen of *Acrocephalus orientalis,* the eastern form of *A. arundinaceus.* He also discusses the species of *Scotocerca,* and maintains—we fear correctly—that the form of *Scotocerca* lately met with in the Wadi Hof, near Cairo, by Mr. Nicoll, and characterized by him as new under the name *Scotocerca inquieta innesi* (Bull. B. O. C. xxi. p. 98), does not differ from the typical *Scotocerca inquieta.*

9. *Hilgert's Catalogue of the Erlanger Collection.*

[Katalog der Collection von Erlanger in Nieder-Ingelheim-a.-Rh. Von Carl Hilgert. Berlin: Friedländer, 1908.]

The great collection of birds formed by the late Carlo, Freiherr von Erlanger, who lost his life by a sad accident, when only just commencing his career *, has been carefully arranged and catalogued by Herr Carl Hilgert, his taxidermist and companion in travel. The 12,500 specimens are referred to 1419 species in the List, and the name, date, and locality are attached to each of them. The collection is specially rich in N.E. African species (where Erlanger made extensive researches) and contains many types. The catalogue will be very useful to those who are working on African Birds, and gives many references to Erlanger's publications.

10. *Marriner's Notes on the Kea* (Nestor).

[Additional Notes on the Kea. By George R. Marriner. Trans. New Zealand Inst. xl. p. 534 (1907).]

Mr. Marriner visited a Sheep-Station (Mount Algidus) in the North Island of New Zealand in July 1907, and quite convinced himself of the ravages of the Kea (*Nestor notabilis*) upon the flocks (see 'The Ibis,' 1908, p. 382). He took photographs of the dead victims, and also of the nest-holes of the Keas, which breed in nearly inaccessible cavities in the highest rocks. We are not sorry to be told that with such breeding-places there seems to be little chance of these "interesting but cruel birds" being exterminated!

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* See 'The Ibis,' 1905, p. 144.

11. *Menegaux's Ornithological Papers.*

[(1) Catalogue des Oiseaux envoyés en 1906 du Tonquin et de l'Annam par M. Bouton. Par M. A. Menegaux. Bull. Mus. d'H. N. 1907, No. 1, p. 6.

(2) Liste des Oiseaux rapportés en 1906 par M. Geay de sud-ouest de Madagascar. Par M. A. Menegaux. Bull. Mus. d'H. N. 1907, No. 2, p. 102.

(3) Ornithologie renseignements pratiques (i., ii., iii.). Par M. A. Menegaux. Bull. Mus. d'H. N. 1907.

(4) Catalogue des Oiseaux rapportés par M. et Mme. Ph. de Vilmorin de Soudan Égyptien. Par M. A. Menegaux. Bull. Mus. d'H. N. No. 6, p. 385.

(5) Liste des Oiseaux de la Guyane Française donnés au Muséum par M. Rey. Par M. A. Menegaux. Bull. Mus. d'H. N. 1907, No. 7, p. 493.

(6) Oiseaux de l'Équateur donnés au Muséum par M. Gonessiat. Par M. A. Menegaux. Bull. Mus. d'H. N. 1908, No. 2, p. 107.

(7) Étude d'une collection d'Oiseaux de l'Équateur donné au Muséum d'Histoire Naturelle. Par M. A. Menegaux. Bull. Soc. Phil. de Paris, 1908.

(8) Sur les embryons, les poussins, et les jeunes oiseaux des Régions australes. Par M. A. Menegaux. Bull. Mus. d'H. N. 1898, No. 2.]

M. Menegaux, who is now in charge of the Mammals and Birds in the French National Museum, has kindly sent us copies of the eight ornithological memoirs of which the titles are given above. No. 1 contains the names of 30 species of birds, examples of which were received from the French Colonies of Tonquin and Annam. No. 2 gives an account of a collection of birds made by M. Geay in Madagascar, which are referred to 19 species; amongst them is a pair of that rare and singular form *Uratelornis chimæra*. M. Geay observed in the sands of the sea-shore near Cap

Sainte Marie in Southern Madagascar innumerable fragments of the eggs of *Æpyornis*. No. 4 relates to a collection of birds from the Egyptian Soudan made by M. and Mme. de Vilmorin. Fifty-eight species are enumerated, and notes are added on each of them. In No. 5 we find the first and second parts of a list of birds forwarded to the Paris Museum by M. Rey, the Governor of the Colony of Cayenne. Most of the 74 species are well-known, but *Vireolanius leucotis* is rather a rarity. In Nos. 6 and 7 M. Menegaux transfers his attention to Ecuador, and registers two collections made in various parts of that Republic. The former, presented by M. Gonessiat, contained examples of 47 species; the latter was a set of duplicates from the Museum at Quito, which are referred to 47 species, many of them being rare and new to the Paris Museum.

12. *Neumann's Notes on African Birds.*

[Notes on African Birds in the Tring Museum. By Oscar Neumann. Nov. Zool. xv. p. 366 (1908).]

Prof. Neumann begins his notes with a useful list of the Musophagidæ, of which he recognizes 32 species and subspecies, belonging to the genera *Corythæola* (1), *Chizærhis* (2), *Corythaicoides* (5), *Gymnoschizorhis* (3), *Musophaga* (2), *Ruwenzorornis* (2), *Gallirex* (2), and *Turacus* (15). Nearly all the Turaci are provided with three names, and the very distinct *Musophaga rossæ* is made a subspecies of *M. violacea*! *Turacus livingstonei loitanus* is a new subspecies from the Loita Mountains, B.E.A.

After disposing of the Touracos, Prof. Neumann gives us his "List of the African Psittacidæ," with much information about their localities, recognizing 31 species and subspecies. Of these *Pæocephalus gulielmi fantiensis*, *P. meyeri nyansæ* and *Agapornis pullaria ugandæ* are described as new subspecies. But he omits to mention *Agapornis lilianæ* and *A. nigrigenis*, both excellent and well-marked species, because, we suppose, they are not represented in the Tring Museum. It would, however, have been well to mention their names in a footnote, if only to show that desiderata occur even in this excellent Collection. Of *A. nigrigenis* many examples have lately been imported alive to England, and it has been well figured by Goodchild in the 'Avicultural Magazine' (vi. p. 317, 1908).

After examining these two articles we are more dissatisfied than ever with the practice of reducing what are quite valid and well marked species to subspecific rank merely because they are supposed to be representatives of each other in different areas.

13. *North on new Birds from the South Pacific.*

[On Three apparently undescribed Birds from Henderson or Elizabeth Island, Paumotu Group. By Alfred J. North. Rec. Austr. Mus. vol. vii. No. i. 1908.]

Six specimens, in spirit, of birds from Henderson or Elizabeth Island, an outlier of the Paumotu Group, South Pacific, have been lately received by the Australian Museum, Sydney, from Mr. A. E. Stephen. They are referred by Mr. North to three new species, which he proposes to call *Calliptilus* (?) *stepheni, Ptilopus insularis,* and *Porzana atra.* Two plates are given to illustrate the natural features of the island, which belongs to Great Britain.

14. *North on the Nesting of the Australian Black-and-White Fantail.*

[On an unusual Nesting-site of *Sauloprocta melaleuca.* By Alfred J. North. Rec. Austr. Mus. vii. p. 21 (1908).]

A pair of this pretty bird nested in 1907 in the verandah of Mr. North's house at Roseville, Sydney. As the nest was just opposite his sitting-room, Mr. North had good opportunities of observing the habits of this species, which are here fully described. Mr. North noticed that both parents sit, but that after a remarkably short time each bird called to its mate to be relieved. The average time during which each bird sat was only a quarter of an hour. This species has not been previously observed to build in a house.

15. *Report on the Zoological Gardens, Giza, for* 1907.

[Government of Egypt. Public Works Department. Zoological Gardens, Giza, near Cairo. Report for the Year 1907 (Ninth Annual Report) by the Director. Cairo, 1908. 30 pp.]

Like most of the other British institutions which we have introduced into the Land of the Pharaohs, the Zoological Gardens at Giza seem to be in a very flourishing state. Capt. Stanley Flower informs us that the year 1907 has proved a "record" for the Gardens under his charge in the number of visitors, in the amount of gate-money taken, and in the increase of the Menagerie. The donations of living animals (225) exceeded in number those received in any previous year, and among the species which bred in the Gardens in 1907 were the Koodoo and the Addax, two fine antelopes which are not known to have reproduced their kind elsewhere in captivity. A new aviary has been built for the Ibises and allied birds, and a new enclosure has been made for the Flamingoes. Amongst the birds which bred in the Gardens in 1907 were the Crowned Pigeon (*Goura coronata*) and Hey's Partridge (*Ammoperdix heyi*).

We need hardly add that no lover of natural history who goes to Egypt should fail to visit the Giza Gardens, which are situated on the tram-line leading to the Pyramids. The three Shoe-bills (*Balæniceps rex*) are still alive and well!

16. *Rothschild on* Casuarius bistriatus.

[Note on *Casuarius bistriatus* Oort. By the Hon. Walter Rothschild, Ph.D. Nov. Zool. xv. p. 392.]

Mr. Rothschild recognizes *Casuarius bistriatus*, lately described by Dr. Van Oort (see 'The Ibis,' 1907, p. 541), as a good subspecies, but maintains that it ought not to be compared with *C. beccarii*, but with *C. sclateri*, of which it is a smaller form. He now enumerates eight subspecies of *C. galeatus*.

17. *Rothschild and Hartert on the Birds of Vella Lavella.*

[The Birds of Vella Lavella, Solomon Islands. By the Hon. Walter Rothschild, Ph.D., and Ernst Hartert, Ph.D. Nov. Zool. xv. p. 351.]

Mr. Meek has now visited Vella Lavella, one of the

Central Group of the Solomon Islands, in which no bird has ever been obtained before, and has furnished the Tring Museum with a collection from it containing examples of 51 species. Although the majority of these are the same as those of the other islands of the central group, some interesting new forms have been discovered (see Bull. B. O. C. xxi. pp. 105–107). The peculiar races of Vella Lavella are remarkable as shewing "a tendency towards melanistic coloration."

18. *Rothschild and Hartert on Birds from San Christoval.*

[On a Collection of Birds from San Christoval, Solomon Islands. By the Hon. Walter Rothschild, Ph.D., and Ernst Hartert, Ph.D. Nov. Zool. xv. p. 359.]

Mr. Meek has also been able to pay a short visit to San Christoval, in the southern group of the Solomons, and to fill up, at all events partially, a much-lamented gap in the fine series of the Avifauna of this group in the Tring Museum. The specimens in it are referred by the authors to 34 species, of which *Halcyon perplexa*, *Monarcha castaneiventris megarhynchus*, and *Zosterops alberti* are characterized as new. Many of the species described from San Christoval by Tristram and Ramsay are likewise represented in the collection, but, unluckily, not *Ceyx gentiana*!

19. *Schalow on the Birds of the Tianshan.*

[Beiträge zur Vogelfauna Centralasiens von Herman Schalow.—II. Uebersicht der von Herrn Dr. Gottfried Merzbacher im Centralen Tiënschan gesammelten Vögel. Journ. f. Orn. 1908.]

On a former occasion (see 'The Ibis,' 1907, p. 511) we called attention to the collection of birds made by the great German traveller Dr. Merzbacher in Central Tianshan, and stated that an account of it was being prepared by Herr Schalow. This account has now been completed, and has been published in two parts in the 'Journal für Ornithologie' for 1908. Herr Schalow has favoured us with a separate copy of his excellent article, and we have great pleasure in saying a few words on it.

The Tianshan Range borders the great desert of the Tarim on the north, rising in places to a height of over 7000 feet and forming a portion of the central mass of the Asiatic continent. Being within the limits of the Palæarctic Region, although not far removed from the unascertained northern boundary of the Oriental Region, the Tianshan is of special interest to workers in Palæarctic Ornithology and deserves our closest attention. Herr Schalow has given us a list of the more recent authorities on the birds of the district, which are not numerous. It will be observed that Russian naturalists (Koslow, Loudon, Bianchi) are, as might have been expected, prominent among them.

Herr Schalow does not state the exact number of specimens in Dr. Merzbacher's collection, but we believe it was not very numerous. Dr. Merzbacher did not himself collect birds, but employed two taxidermists to do so. The specimens thus obtained are referred by Herr Schalow to about 150 species, which, as a rule, are well-known Palæarctic species, or, in some cases, we may say subspecies, for Herr Schalow is a strong advocate of trinomials, and gives three names to the greater number of the birds referred to. There are a few Himalayan forms in the list, such as *Mycerobas carneipes*, *Carduelis caniceps*, and *Ruticilla grandis*, but the majority are northern mountaineers.

It is quite certain that there are many more species of birds in the Tiantshan than are represented in the present collection, and we are glad to hear that Dr. Merzbacher has returned to that country and may probably procure an additional series.

20. *Stuart Baker on Indian Ducks.*

[The Indian Ducks and their Allies. By E. C. Stuart Baker, F.Z.S., M.B.O.U. With 30 coloured Plates, by H. Grönvold, G. E. Lodge, and J. G. Keulemans. 1 vol., large 8vo. 292 pp. Bombay and London, 1908. London: R. H. Porter, 7 Princes Street, Cavendish Square, W.]

Mr. Stuart Baker has contributed to the Journal of the Bombay Natural History Society a series of articles on the Indian Ducks and other Chenomorphæ. He now reprints these, with additions and corrections to bring the List up to date, in a handsome octavo volume, which is further ornamented by 30 coloured plates drawn by some of the best living bird-artists. Mr. Stuart Baker wisely follows nearly the arrangement and nomenclature used by Salvadori in the twenty-seventh volume of the British Museum Catalogue of Birds. He introduces the Red-breasted Goose into the Indian Avifauna mainly on the faith of specimens seen on the Brahmapootra. It is quite likely to occur there in the cold season, but we are not aware of there being Indian specimens of this Goose in any museum. The generic name of *Rufibrenta*, we may observe, which is here adopted for this species, is quite unnecessary, as it is a typical *Brenta*, except in colour.

We do not find that Mr. Stuart Baker has solved the problem of what the Swan is that breeds regularly on the Lake of Seistan (see 'Ibis,' 1906, pp. 397, 612, 737).

21. *Stuart Baker on the Birds of the Khasia Hills.*

[Birds of the Khasia Hills. By E. C. Stuart Baker, F.Z.S., M.B.O.U. Journ. Bombay N. H. Soc. 1907, pp. 783, 957.]

The Khasia Hills in Assam, although separated from the Himalayas by the great valley of the Brahmapootra, are said to have nearly the same phase of animal life. All round the foot of the Khasias, as Mr. Stuart Baker tells us, the dense tropical woods contain much bird-life, but few forms of great interest. Towards Shillong there are immense stretches of grass-land, until, about five miles from that place, where the pine-forests begin, in the extreme east of the Khasias, there is another kind of country—grass-covered hills varied by scattered oak-forests. "Towards Cherraponji and its vicinity there are many huge cliffs that afford breeding-places to several interesting birds, amongst which are the local Swift (*Cypselus acuticauda*) and the Striped Swallow (*Hirundo striolata*). *Hirundo daurica* also breeds in the houses in the native villages." Other interesting birds of the Khasias, Mr. Stuart Baker tells us, are the Long-tailed Wren

(*Urocichla longicaudata*) and the local form of Laughing-Thrush (*Dryonectes subcæruleus*).

Mr. Stuart Baker's List of Species is compiled from the collections of Hume, Godwin-Austen, and others, and from several collections made by his own men. He follows the arrangement and nomenclature of the 'Fauna of British India,' and gives short notes to each species. As regards the subfamily Brachypteryginæ of the Crateropodidæ, he remarks that, although for the sake of convenience he retains Oates's classification, there is no doubt that the majority of the birds placed in this family in the 'Fauna of British India' belong elsewhere. He would accordingly refer the genera *Myiophoneus*, *Larvivora*, and *Drymochares* to the Turdidæ.

Altogether Mr. Stuart Baker enumerates about 536 species as belonging to the Khasian Avifauna.

22. *Stuart Baker on the Indian Cuckoos.*

[The Oology of Indian Parasitic Cuckoos. By E. C. Stuart Baker, F.Z.S. Journ. Bombay N. H. Soc. 1906-8. (Parts I.-V.)]

The abnormal breeding-habits of the Cuckoos are of special interest to all naturalists, and Mr. Stuart-Baker has done well to prepare a series of papers on the engrossing subject of their eggs, to which he has long devoted his attention.

"The great difficulty," he observes, "to be overcome in collecting Cuckoos' eggs is not so much to get hold of eggs which are Cuckoos' beyond all doubt, but to obtain proof as to what particular Cuckoo they belong to. To do this it is absolutely necessary to get eggs direct from the oviduct of the female, and because Cuckoos' eggs vary so much it is of no use to get one egg only, but series are required." The Indian Parasitic Cuckoos, to which Mr. Stuart-Baker confines his attention, are 17 in number, belonging to the genera *Cuculus*, *Hierococcyx*, *Cacomantis*, *Penthoceryx*, *Chrysococcyx*, *Surniculus*, *Coccystes*, and *Eudynamis*. The true *Cuculi* in India are four. Our familiar *C. canorus*, which heads the list, is stated to breed freely throughout the Himalayas and Sub-Himalayas, the Burmese Hills, Chagpore, and the Neilgherries. Mr. Stuart Baker has seen about 40 Indian specimens of its eggs. A list of 20 species of Passeres in which its eggs have been found is given. The egg of *C. saturatus* has also been obtained, but is much scarcer than that of *C. canorus*; it is white or very slightly speckled, and two coloured figures are given of it on plate i.

Of both the two other Indian species of true Cuckoo (*C. poliocephalus* and *C. micropterus*) authenticated eggs have also been obtained, and that of the latter is figured on plate ii. It is pale blue, but in some examples a few specks are visible.

Of *Hierococcyx nisicolor* the eggs are quite different, being short and stumpy, and varying from dark brown to olive, but those of *H. sparverioides* are again of a uniform pale blue.

The known eggs of the species of *Cacomantis, Penthoceryx, Chrysococcyx, Surniculus, Coccystes,* and *Eudynamis* are all fully discussed by Mr. Stuart Baker in Parts II. and III. of this series of excellent papers, and many interesting eggs are figured and described. In Part IV. some additional notes are given, and the extreme abundance of our common Cuckoo in the Khasia Hills is insisted upon. In the spring of 1907 at Shillong the author had brought to him no less than 59 eggs of *Cuculus canorus*! In Part V. (1908) Mr. Stuart-Baker descants on an undoubted *blue* egg of *Cuculus canorus,* and shews that a remarkable egg found in a nest of a Sun-bird (*Æthiopyga scheriæ*) must have belonged to *Chrysococcyx maculatus.*

23. *Winge on the Birds of the Danish Lighthouses in* 1907.

[Fuglene ved de danske Fyr i 1907. 25de Aarsberetning om danske Fugle. Ved Herluf Winge. Vid. Medd. fra d. nat. Foren. Kbhvn. 1908.]

This is the twenty-fifth annual report of Herr Winge's series of papers upon the birds obtained and observed at the lighthouses which surround the coast of Denmark. In 1907 1738 specimens were forwarded to the Cophenhagen Museum and referred to 79 species, while the whole number of birds observed was estimated to be over 8000. The species of most frequent occurrence were *Alauda arvensis, Sturnus vulgaris, Turdus iliacus, T. musicus, Erithacus rubecula,* and *Fringilla montifringilla.* The commonest migrant of all appears to be the Song-Thrush, of which it is calculated that at least 4492 specimens were noticed. Yet this bird (in spite of what Newton told us long ago, see 'The Ibis,' 1860, p. 83) is not usually considered to be a migratory species!

An excellent map, as usual, accompanies Herr Winge's report and shews the position of all the Danish lighthouses.

24. *Wollaston's 'Ruwenzori.'*

[From Ruwenzori to the Congo. A Naturalist's Journey across Africa. By A. F. R. Wollaston. London: John Murray, 1908. 1 vol., 8vo. 315 pp.]

Dr. A. F. R. Wollaston was one of the expedition planned and financed by Mr. Ogilvie-Grant to explore the mountain-chain of Ruwenzori, and, as Medical Officer, to look after the health of his companions (Messrs. Woosnam, Dent, Legge, and Carruthers) and their followers, as well as to assist the good cause by helping to form botanical and zoological collections. We have given frequent notices of the progress of the Ruwenzori Expedition in this Journal and an account of its return, also of the mode in which it is proposed to publish the results*, but this volume is the first regular narrative of the Expedition that has been made public.

Dr. Wollaston was not able to start along with the other members of the Expedition, and when he caught them up found them already well established in camp at Bihunga, on the eastern slope of Ruwenzori, in the Upper Mubuku Valley. Here the party remained for very nearly four months, and found no lack of occupation in any branch of natural history. For the first month the weather was uniformly fine. "Day succeeded day of bright sunshine and cloudless skies: it was neither too hot by day, nor too cold by night. Birds nested, butterflies were on the wing, and the hill-sides were ablaze with flowers." But suddenly the rain came, and thereafter, with the exception of a few occasional fine days, never ceased, so that the climate fell much below the ideal that had been previously formed of it. However, excellent collections were made both in zoology and botany in spite of the weather, and various excursions were carried out with the view of reaching the snowy summits of the main range. Among the birds met with at an altitude of some 13,000 feet was a splendid new Sun-bird, "of a dark metallic green shot with a wonderful iridescent purple," which has been named "*Nectarinia dartmouthi*," after one of the most liberal supporters of the expedition.

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* 'Ibis,' 1908 p. 548.

The next chief halting-place of the expedition was on the plains of Ruisamba, a very different kind of country, which flanks the Ruwenzori range on the south-east. Here a second base-camp was formed near a village called Muhokya, and collections were again made. The next effort was to find a good resting-place in the Congo Free State district on the western slope of Ruwenzori. To do this it was necessary to go round the south end of Ruwenzori, and then turn northwards down the Semliki Valley to the Congo Free State Station of Beni, celebrated as the place where the Okapi was discovered by Sir Harry Johnston. Although the Ruwenzori Range was reached from this station, and the Butagu Valley was ascended to a height of 10,400 feet, the hostility of the natives—due, it seems, to the mismanagement of the Belgian officers—soon necessitated a hasty retreat to Fort Beni and thence to Toro. Here it was resolved to be impracticable to continue the exploration of the eastern slope of Ruwenzori in the then disturbed state of the country, and it was agreed to break up the expedition. Mr. Legge returned straight to England by Entebbe and Mombasa, Messrs. Woosnam and Dent made a direct journey to the West Coast down the Aruwimi and Congo, and Dr. Wollaston and Mr. Carruthers resolved to visit the volcanoes of Mfumbiro and Lake Kivu and thence to cross the Continent to the West Coast by a more southern route. How they accomplished this is well told in the present volume, which is one of the best-written and most interesting books of travel that we have come across for many years. There are some, though not many, allusions to birds in it, but Dr. Wollaston was busy with his plants and insects and left the "birds" to his companions, from whom we shall, no doubt, get full information on this part of the subject when the general results are published.

The volume is well illustrated by numerous full-paged plates taken from photographs, most of which are excellent. No one interested in Natural History of any kind should fail to read it.

VIII.—*Letters, Extracts, and Notes.*

We have received the following letters addressed "To the Editors":—

Sirs,—Some account of the breeding of the Golden-eye (*Clangula glaucion*) in captivity may perhaps find a place in 'The Ibis.'

I had kept a pair of these ducks for six or seven years on a pond in my park together with a great variety of other water-fowl. The male courted the female every spring, but she had never laid any eggs. In May last the female was observed to frequent some of the nesting-boxes which are placed on poles in different parts of the pond, and in the latter half of the month two bright green eggs were found in one of the boxes and a third in another box.

As the female Golden-eye shewed no inclination to incubate, being probably disturbed by some female Summer-Ducks which laid eggs in the same boxes, the three green eggs were put under a domestic hen. After being sat upon for twenty days, on the 26th of June the three eggs were hatched, giving birth to three black-and-white ducklings. One of these died the first day, but the two others have been doing well and are alive now. The downy dress may be described as follows:—Upper parts black, crown of head glossy black. Throat and sides of head to almost under the eyes, but *not* meeting at the back of the neck, pure white. A white spot on each shoulder and one lower down under each wing. At the root of the tail on each side of the back there is another white spot. Under parts grey, lightest on the belly. Bill black. Legs and feet black, with greenish along the toes.

As will be noticed, the coloration of the chicks resembles in general character that of the chicks of the Velvet Scoter, but in the latter the six white spots which adorn the back of the Golden-eye chicks are wanting.

The little birds were very active and soon got tame and intelligent. They lived principally on ants' eggs and duck-weed. On the 18th of July feathers became visible on the shoulders. On the 8th of August the birds were completely feathered; the flight-feathers, however, were only just beginning to grow. Their appearance may be described as follows:—

Head chocolate-brown, belly and lower breast pearly white. The rest of the bird slaty black, darkest on the underside where it meets the white. The white wing-mark of the adults is present. The legs and toes are yellowish, the webs are black. The iris is chocolate-brown. The bills are rusty.

About the 25th of August the birds were able to fly and practically full-grown. The young birds differ in size in the same way as the sexes do in the adults, and are evidently male and female.

I am, Sirs, yours &c.,
F. E. Blaauw.

"Gooilust," 'sGraveland,
Hilversum, Holland.
September 8th, 1908.

Sirs,—It may interest you to know that on the passage of my ship down the Red Sea on October 2nd, 1908 (lat. 21° 25′ N., long. 38° 15′ E.), large flocks of Swallows settled on the vessel from about noon till about 4 or 5 p.m. The exact position, as you can see by the map, is at the narrowest part of the Red Sea and evidently chosen by the birds as the proper place to make their crossing. There would be nothing unusual in Swallows settling on the ship except on account of the large numbers on this occasion. The birds seemed to have lost their usual instinct of direction. They roosted for the night under the awnings of the bridge deck, and many of them came into the music room, and even into the lower cabins of the vessel. At the first streak of dawn the next morning almost all of the birds set off, steering almost due south-west, but some of the Swallows were so tired and utterly done up as to be unable to fly and remained on their perches under the awnings until they collapsed, falling off one by one and dying. There were three or four different kinds of Swallows in the same flock, some had black throats, some bronze, some white. Some had the long pointed tail, with a large white spot on each tail-feather and a few white feathers on the back, whilst many of the birds had the short tail, as seen in Indian House-Swallows and Martins. The Swallows were also accompanied by several yellow Wagtails, five or six Doves, and a few Hawks, which occasionally picked up a tired Swallow. We tried to revive some of the birds as they dropped helplessly on deck by giving them a little water—it did revive them for a time, but they soon died. I have been up and down the Red Sea eight or ten times per year during the last thirty years, but never before saw so many birds on passage, nor have I ever before seen a Swallow unable to proceed on its way after a night's rest on the ship. The weather was exceedingly hot at the time, but all other conditions were normal. The birds were all fully feathered and in good condition; there was a considerable amount of droppings from them, shewing that they could not have been very long without food.

I am, Sirs, your obedient servant,

W. H. Haughton,
Commander, R.N.R.,
Commander P. & O. s.s. 'Persia.'

Aden, October 3rd, 1908.

Sirs,—During a stay of thirteen months in Russian Turkestan (from Sept. 1907 to Oct. 1908) and the Khanate of Bokhara, I formed a collection of about 730 specimens of birds and mammals in the Zarafshan Valley.

The Zarafshan is a typical river of inner Asia, having its source amongst giant mountain-ranges, and eventually drying up in a sandy desert. It follows that there is a great variety in temperature and flora, and therefore a correspondingly great variety of bird and animal life. The country that I actually worked varied in altitude from 150 ft. to 18,000 ft. above the sea-level. There is practically no wild forest in the Zarafshan Valley, and the fauna will, I think, be found to belong rather to Northern Afghanistan than to Turkestan proper.

Animal life was especially numerous in the sandy deserts and tamarisk-swamps. A very strong and sudden northward migration of birds in the spring was also of great interest.

It appears that no Englishman has ever made a systematic collection of birds anywhere in this neighbourhood, and Severtzoff's work seems to include little about the south-western corner of Turkestan. The Transcaspian Railway made travel and work in the plains very easy, but the upper Zarafshan Valley is difficult of access, and the mountain-paths are particularly difficult and even dangerous.

I also made a journey into the South-western Tian-Shan to the high plateaux of Chatir-kul and Ak-sai, north of Kashgar. On these high steppes bird-life was very scarce indeed, and mammal-life was almost entirely absent, except for marmots and one species of vole. But on the mountain-ranges which surround the plateaux there is a greater amount of life.

The difficulties of travel, the lack of fuel and of fodder, made collecting exceedingly difficult, and I found all the birds at the end of August in such a bad state of plumage that they were scarcely worth the trouble of preserving.

I am, Sirs, yours &c.,
D. CARRUTHERS.

The American College,
Beirut, Syria,
Nov. 3rd, 1908.

Birds of Bear Island and Spitzbergen.—From the 'Bericht' of the Senckenbergische Naturforschende Gesellschaft of Frankfort-on-the-Main for 1908 we learn that on January 18th, 1908, Prof. Dr. A. König, of Bonn, gave the members of the Society an account of his recent expedition to Bear Island and Spitzbergen. At Bear Island the rocks on the coast were covered with countless breeding-flocks of Guillemots (*Uria troile, U. ringvia*, and *U. bruennichi*) and other sea-birds. An excursion was made into the desolate interior of the island, where *Charadrius hiaticola* and *Phalaropus fulicarius* were found breeding, and Scoters (*Œdemia nigra*) were seen, while feathers of *Sturnus vulgaris* and *Turdus iliacus* and *T. merula*, eaten by foxes, were discovered.

In Spitzbergen the party visited Prince Karl's Foreland and found *Anser brachyrhynchus* and *Bernicla leucopsis* breeding there. Two nests of *Somateria spectabilis* were obtained, and a pair of *Xema sabinii* with their nest and eggs were secured. Dr. König claims to have added *Mareca penelope* and *Scolopax rusticula* to the avifauna of Spitzbergen.

Increased Fertility of the Domestic Fowl.—It would appear that in Australia the Domestic Fowl, under special treatment, can be greatly advanced in fertility. In the official report of the "Egg-laying Competition" lately held at the Agricultural College, Roseworthy, South Australia, some surprising facts on this subject are given by Mr. D. F. Lawrie, "Poultry-Expert and Lecturer." Seventy-five pens, each of one cock and six hens, were shewn in the competition. The total number of eggs laid by all the 450 hens in one year was 80,959, making an average for each pen (of six hens) of 1079, and an average for each hen of 179. The special breeds selected for the "Egg-laying Competition" were White Leghorns, Black Orpingtons, and Silver Wyandottes, but the White Leghorns were by far the most in number. The pen which produced the greatest number (1531) in the year was of White Leghorns. These remarkable results are attributed to the "continued careful breeding of laying strains." Mr. Lawrie is of opinion that "by a continual careful mating and subsequent care of the progeny for several generations it is possible, not only to considerably increase the average egg-production, but also, by careful selection, to evolve a strain with robust constitution, immunity from disease, and marked fecundity."

We suppose that no *Gallus bankiva* in a state of nature would lay more than from 20 to 30 eggs in the year. To increase the number of eggs to 179 is, therefore, a remarkable piece of work. But this, it appears, can only be done in Australia. In our cold climate, we are told on the best authority that anything over 100 eggs from each hen is quite exceptional.

Mr. Boyd Alexander's new African Expedition.—Mr. Boyd Alexander is now departing on another important expedition to West Africa, and will leave England very shortly. The main object in view is the establishment of the fact that the chain of islands in the Gulf of Guinea, on the West Coast of Africa, which are situated at distances varying from twenty to forty miles from the mainland, formed at one time a part of the African Continent.

Some years ago, Mr. Alexander during his exploration at Fernando Po demonstrated that the fauna of that island was closely allied to that of the mainland. As a result of his investigations on that journey, the explorer decided, when opportunity offered, upon pursuing similar investigations with regard to the remaining islands of that group. Literature regarding these islands is scanty, and there has been hitherto practically no scientific exploration of them.

Another important point is to discover whether these islands are of volcanic origin.

Mr. Alexander will not be accompanied by any other European during his travels. His assistant, José Lopez, will leave England in advance, in order to organize the caravan of the expedition at Cape Coast. There being no labour available on the islands themselves, Mr. Alexander will disembark at the Portuguese island of San Thomas, the most important island of the group, where he will commence his work, and where he will be joined by his Haussa caravan. He proposes to ascend the mountains in the centre of the island, which have an altitude of about 5600 feet, and he will spend altogether about two months in San Thomas, exploring and making collections. Mr. Alexander will then sail to the most southerly island of the group, the Island of Annebon, and on the completion of his work there will also visit Prince's Island.

Having finished its work on the chain of islands, the expedition will cross to the mainland for the purpose of exploration in the Kamerun Colony, for which every assistance will be given by the German Government. The first object will be to ascend the celebrated Kamerun Peak, which rises to an altitude of 13,000 feet, and which the explorer holds to be the sister mountain of Ruwenzori in East Africa. He expects that he will find here a fauna nearly identical with that of Ruwenzori. The district to be traversed is largely unknown, and one of the great difficulties will be the lack of water, which will have to be carried by the expedition.

If time and health permit, the expedition will further penetrate into the interior of Kamerun, to explore a range of hills which are said to attain an altitude of 10,000 feet. Travelling is, however, very difficult, owing to the mountainous nature of the country and the difficulties of transport. The expedition will probably be absent about twelve months.

Proposed Zoological Exploration of Dutch New Guinea.—Mr. W. R. Ogilvie-Grant sends us a copy of the following appeal to his "Brother Members of the B. O. U.":—

"We are now celebrating the Jubilee of the greatest Ornithological Society in the world, and it has occurred to me that we might do something more than is at present being done to mark this great event. My suggestion is that we should unite in undertaking the zoological exploration of a totally unknown land of vast and unlimited promise, and that the ornithological results, which are certain to prove unique, should be published in a special volume of the 'Ibis' in further commemoration of the Jubilee.

"The following is a brief outline of the scheme, with which I am sure you will all be in sympathy, and in which I hope as many of you as possible will participate.

"The wonderful Fauna of New Guinea, especially the marvellous forms of Bird-life to be found there, has long attracted the attention of naturalists in all parts of the world. The explorations during recent years of certain portions of the Dutch territory at the north-west end and of the British and German possessions at the eastern extremity have brought to light many extraordinary and hitherto unknown forms, more particularly new Birds-of-Paradise and Gardener Bower-Birds; but the central portion of that vast island is still absolutely unexplored, though there is no portion of the Globe that promises to yield such an abundance of Zoological treasures to those prepared to face the difficulties of penetrating to the great ranges of the interior.

"The Charles Louis Mountains in Central Dutch New Guinea are an immense snow-capped range forming part of the great central system that stretches east and west across the island. The highest peaks are believed to attain an altitude of from 16,500 to 17,500 feet, and are thus the loftiest mountains in the whole Archipelago, and in the whole area between the Himalayas and the Andes. They probably exceed the Owen Stanley Mountains in British New Guinea by about 5000 feet. Until quite recently the hostility of the natives has frustrated all attempts to enter this part of New Guinea, but the time has now come when it is possible for a properly equipped expedition to explore the range, the Dutch having arrived at an amicable understanding with the inhabitants.

"During the last few years Mr. Walter Goodfellow, the well-known traveller, has made several expeditions to New Guinea, and as the result of careful enquiries he has satisfied himself that the projected undertaking would in all probability prove successful.

"It is proposed that an Expedition should leave England about June, 1909, under the leadership of Mr. Goodfellow, who has been able to make specially favourable arrangements for obtaining porters and transport.

"The services of two other well-known naturalists with previous experience in New Guinea have also been secured, and to these it is hoped to add two more specially selected men, should the funds prove sufficient, so that all branches of Zoology and Botany may be investigated.

"As a large sum of money has already been promised, the working expenses of the Expedition are assured, but my great desire is to associate this undertaking with the Union, so that it may be known as the 'B. O. U. Jubilee Exploration of the Charles Louis Mountains.'

"Should the scheme meet with your approval I shall be glad to receive subscriptions from any Member of the B.O.U. of sums from half a guinea upwards. These may be sent direct to Mr. C. E. Fagan, Natural History Museum, Cromwell Road, London, S.W., who has kindly consented to act as Treasurer.

"The greater the resources the longer the Expedition can remain in the field. Any available funds after the termination of the Expedition might be devoted to the publication of a special volume of the 'Ibis,' containing the ornithological results of the Expedition.

"It is intended that such portions of the collections as may be required for the British Museum shall be offered to that Institution, as a present from the Subscribers."

THE IBIS.

NINTH SERIES.

No. X. APRIL 1909.

IX.—*A Journey to British New Guinea in search of Birds-of-Paradise.* By Charles B. Horsbrugh.

(Text-figure 7.)

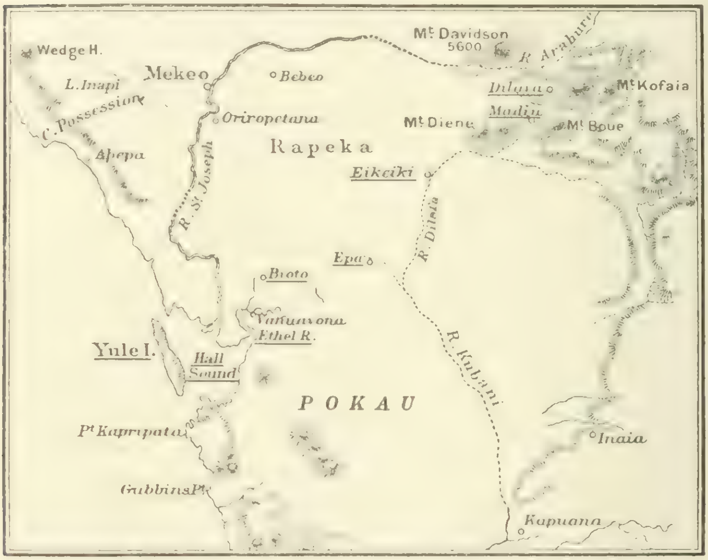
The experiences here related are the result of a two months' expedition into the interior of British New Guinea (or Papua, as it is now called), for which country I left England in December 1907. I had only a bare three weeks in which to organize my expedition and complete the innumerable arrangements regarding stores, medicines, ammunition, and other matters which a journey into the jungle always entails. My object in visiting Papua was to obtain as many living Birds-of-Paradise as possible and other birds that were deemed rare enough to be worth the trouble of transportation to England. Sir William Ingram stood sponsor for my journey, in conjunction with the Zoological Society of London; and I must acknowledge how deeply I am indebted to Sir William for the manner in which he spared no expense whereby I might attain my object. Although he warned me that I should meet with many difficulties in an expedition of this character, he said that he was convinced that I should overcome such as might arise, and reward the trust that he had in my capabilities and judgment. He kindly met me at Marseilles on my return on the 28th of June last, and, after inspecting the collection of birds on board the P. & O. s.s. 'Victoria,' informed me that he was thoroughly satisfied with the results of my journey. I must also state that owing to the assistance given me by way of useful introductions from the Zoological Society, I found my expectations far exceeded in the facilities afforded me for travelling in New Guinea, and, what was more important still, for procuring so many of the rarer birds which I went abroad to seek. I have never met with so much help and kindness as was shown me when I presented my credentials to His Excellency Judge Murray, the Acting Administrator of Papua, and the other Government Officials, who took the greatest interest in my expedition and did their utmost to promote its success.

Before my departure from England I endeavoured to collect all available information concerning New Guinea, but it did not amount to very much, and two troublesome items—fever and cannibal natives—I was seldom allowed to forget. I left Tilbury Docks on Dec. 20th bound for Sydney in the P. & O. s.s. 'Britannia,' and had ample warnings as regards these matters throughout the trip from my fellow-passengers, who echoed each other's ideas, and drew on their own imaginations to supplement them. I reached Sydney after a most enjoyable voyage on Jan. 31st, and after spending four days in that charming city, fully occupied in getting my stores unloaded and passed through the Customs, I boarded the A.U.S.N. s.s. 'Aramac' bound for Cooktown. Two days were spent *en route* at Brisbane, and when inspecting the museum there I was informed that my companion Mr. Wilfred Stalker, whom I expected to meet in New Guinea, was intending to sail from Brisbane by the 'Aramac' the same day. For obvious reasons it was preferable that I should not travel alone in strange places, and Mr. Stalker, who, before my departure from England, had been employed in collecting mammals and birds for Sir William Ingram in the northern territory of Australia, had been advised by cable to meet me and accompany me to New Guinea. We quickly discovered each other at Brisbane, and throughout our travels were the best of companions and friends. I shall always entertain a high sense of appreciation and esteem for the plucky and cheerful companion to whose help I owe so much.

Landing at Port Moresby, the seat of the Papuan Government, on February 28th, we had to wait for ten days before we could proceed to Yule Island, whence we proposed to enter the interior; and during this enforced halt we were daily engaged in getting together "trade" for the natives, and in endeavouring to persuade one or two "boys" to join us as interpreters and servants. This we found no easy matter. We would interview a certain number, and all arrangements would appear to be advancing satisfactorily until our destination was mentioned. Then the excuses came out. One had married a wife, another was busy in collecting a debt, and there were other antiquated and annoying reasons which we found it very difficult to overcome. It had so happened that some months previous to our arrival a native policeman had been killed and eaten somewhere in the vicinity of Mt. Yule, toward which our proposed route stretched, though miles away from the mountain itself. Our would-be guides and interpreters unanimously declined to take any commercial risks with *their* heads. Eventually we "signed on" three youths for a six months' engagement, and straightway started them off into the bush to see what they could accomplish as entomologists. The results were poor, and the next day we "signed off" one who was partially blind. Before leaving Yule Island we had to discharge a second boy, as the police there gave him so many harrowing accounts of carriers who had disappeared mysteriously for ever, added to other stories of a gruesome nature, that an annoying attack of "funk" rendered him useless in any capacity. Port Moresby lies inside a land-locked bay, the entrance to which is difficult on account of numerous reefs, while behind the town high and magnificent ranges and spurs of the Owen-Stanley Mountains stretch for miles parallel to the coast. Along the shore the foot-hills are clothed in dense vegetation, occasional open patches revealing undulating slopes vivid with rank green grass. Large masses of misty clouds frequently divide the inland ridges and completely conceal the summits of many a lofty peak.

The white residents at Port Moresby number about seventy, and include Government Officials, Store-keepers, traders, and others of various callings. At this place what is known as the "South-east Season" generally extends from May to November, and during that period a continuous wind prevails, clearing the town of mosquitoes and lowering the temperature, which reads in the mean about 79°. During the remainder of the year the "North-west Season" prevails, with a temperature increasing to about 81°, and mosquitoes become very troublesome. The mean monthly rainfall is about 2·25 inches.

Text-fig. 7.


Wedge H.
L. Inapi
Mekeo
C. Possession
Apepa
Bebeo
Oriropetana
Rapeka
R. St. Joseph
Mt. Davidson
5600
R. Arabure
Dilava
Madiu
Mt. Kofaia
Mt. Diene
Mt. Boue
Eikeiki
R. Dilava
Epa
Bioto
Yaifuavona
Ethel R.
Yule I.
Hall Sound
POKAU
R. Kubani
Pt Kaprıpata
Gubbins Pt.
Inaia
Kapuana

Map of part of Papua visited by Mr. Horsbrugh.

Having definitely decided on our route and completed our purchases of stores, we embarked with our two attendants and Stalker's retriever pup on the 'Lotus,' a schooner of about 25 tons. We landed on Yule Island on the fifth day, after a monotonous passage, which should have occupied only two days had we not been becalmed and experienced contrary winds. The headquarters of the Roman Catholic Mission are situated at the southern end of Yule Island, the majority of its members being French. Our vessel dropped anchor opposite this spot, where the surrounding views were very picturesque. We soon landed our packages, and Mr. N. H. M. Bowden, the Resident Magistrate, most hospitably entertained us and gave us all the assistance in his power. After a few days' delay, during which we unpacked our stores and arranged them into convenient loads for porterage, we "signed on" six more "boys" as gun-bearers and in other capacities. Our kind host had sent word across to the mainland that we required canoes to transport us to Bioto. This place lies about nine miles from the mouth of the Ethel River, which flows into Hall Sound opposite the south point of Yule Island. Judicial business demanded the Magistrate's presence in Bioto, and we accompanied him thither, returning late the same day. The heat on the fine river I found very trying, but its beauty was marvellous, though the amount of bird-life hardly equalled our expectations. One or two large Eagles sailed over the many swamps which concealed the river's banks, whilst the passage of the whale-boat disturbed Jacanas, Shell-ducks, Cormorants, Blue Coots, White Egrets, and a variety of Waders.

We had frequent shots at crocodiles, which slid into the water unharmed, until we were about to turn up a tributary, at which spot I severely wounded a specimen about five feet in length, and as it dived Bowden finished it. On arriving at Bioto we passed the time in collecting butterflies and a few birds, which included a small Parrot, some Wood-Swallows, and Jacanas, as well as a fine Blue Coot, which one of the missionaries shot for me in a swamp. An amusing scene occurred ere our return. The police, who formed our crew, had been busy capturing prisoners wanted for various petty offences and obtaining a few witnesses, who accompanied us back to Yule Island. Their friends and relatives surrounded us and uttered most harrowing lamentations, to which all the children and innumerable pariah dogs added their voices. The scene would have been piteous had we been a murderous press-gang, but the police treated it as an amusing spectacle, seeing that these captives would all return at no very distant date. A few days later, when we again set foot in the village, several natives joined us as carriers. Travelling down the stream we occasionally bumped on a sand-bank, when the crew and prisoners jumped overboard and pushed the whale-boat into deeper water. Steering continuously from one side of the river to the other, we kept a look-out for more crocodiles, but failed to notice any. One of the police, however, observed a Cuscus feeding in some low saplings, and the boat being brought to the bank he and several of the prisoners scrambled through the reeds towards it and endeavoured to shake it down. Failing this, the man fired four bullets into the unfortunate creature, much to our disgust. Stalker, nevertheless, preserved the specimen for identification.

On March 16th we quickly loaded up the canoes, which lay in a small cove below our host's bungalow; while the natives at once set sail across the channel, and not long afterwards we did likewise in the whale-boat, lent by the Magistrate, along with our personal luggage, staff, and puppy. Some crocodiles were seen, but caused no delay, as the police had forgotten their rifles, and were soundly rated for their neglect by the sergeant in charge. Before the morn had passed away we had taken possession of a house in the village at Bioto, wherein we found the natives had placed our stores, and proceeded to make ourselves comfortable. We proposed to feast on a duck which one of our "boys" had shot, but it was too tough for enjoyment. The natives were much interested in our proceedings, and one of them brought in a fine Cuscus alive, tied to a stick. It was creamy-white in colour with fairly large dull brownish spots. Although I tried to rear it the poor thing died a day or two later, and I have seldom skinned such a fat and tender-skinned creature as it proved to be. We determined to push on during the following day, as Bioto was a great stronghold for blood-thirsty mosquitoes, and the place is by no means a health-resort. We quenched our thirst with the milk from some delicious young cocoanuts, and as the trees only grow along the coast we made the most of our opportunity. The missionaries whom we met during our first visit were away at the time, so we made arrangements with the native chief to use his village as a base for some of our supplies to be forwarded at a later date.

Early next day we assembled our carriers to proceed to Epa, and having the loan of a government pony I led the advance, while Stalker brought up the rear. The track for a considerable distance was very swampy, owing to the recent heavy rains. Wherever a tree had fallen across our trail we had either to get over it in the best way we could or to make a semicircle around the branches. The overhanging tangle of creepers and bushes sometimes dragged me out of the saddle and tore my clothes and flesh to an uncomfortable extent. The crossing of a small stream caused us much trouble, as the bridge which spanned it had rotted away. We could not persuade the pony to swim across, and the animal tried to climb into the remains of the structure, but slipped between the uprights and fell into the water. We released him by using our tomahawks, and he then managed to reach the opposite bank in a rather exhausted state. A partially submerged tree, over which I tried to pass, gave way and I fell into the stream, but the natives quickly helped me out of my difficulty.

Shortly after this adventure the path became steeper, and we were continually ascending and descending, sometimes through open grass-covered slopes thinly dotted with Eucalyptus trees, succeeded by belts of jungle of greater or less density. Frequently the track led over the brow of a slope, so that it was possible to look down for a little distance into the thick scrub on either hand without the necessity of stepping aside. Mosquitoes became less numerous than in the low country. Parrots, the Crowned Pigeon (*Goura coronata*), and other Pigeons and *Paradisea raggiana* could be heard in the higher trees as we marched along, though not often seen. Great masses of orchids hung from the branches and clustered on the trunks of the trees, but it did not appear to be the season for them to be in bloom.

Occasionally we heard Cassowaries, which usually keep away from a track frequented by human beings. This bird's voice sounds to me like very distant and indistinct thunder. At this season rain is of daily occurrence, and innumerable streamlets crossing the track made it rough and slippery, but the porters took great care of our belongings and we found nothing damaged when we reached camp. Of how many miles that first day's march consisted I cannot state, but we both had more than enough of it and were pleased when we came to Epa. Here we invaded the mission-house and stored our personal luggage inside, while the natives made themselves at home underneath the house and on the wide verandah. Cooking-operations were soon started and everyone finally settled down, not, however, before the day's events and a host of other subjects had been discussed far into the night. Before our start next morning I bought a Frogmouth (*Podargus intermedius*) for a stick or two of tobacco. I kept the bird alive for a week, and it became fairly tame and readily ate grasshoppers of all sizes; but I can say nothing of its habits in captivity, as it was a mournful-looking object, and sat silent and inactive all day in its cage. At this place Stalker deemed it wise to remain until he could get more of our impedimenta brought up from Bioto. We sent back the pony by the policeman, with a few carriers who would not go any further. The rice, which was intended to serve as food for our staff and carriers, had mostly been stored at our first halt, with several other items which might be required when we finished our marches. Stalker and some of our personal attendants were, therefore, left behind whilst I advanced to Eikeiki, which was reached the same afternoon. Where the village lay I had no time to discover, as none of its inhabitants came to meet us. The mission-house there stood on a little hill, from which was obtained a fine view of the mountains densely covered with vegetation. I made use of this dwelling, and while attending to preparations for the evening meal heard some shots in the surrounding jungle, and soon afterwards one of our boys returned with a fine male *Paradisea raggiana*. This bird seemed fairly plentiful in the neighbourhood, judging by its continuous calling. I took a short stroll along the track and saw some White Cockatoos and Hornbills, and heard some Goura Pigeons. I also caught fleeting glimpses of smaller birds, with which I was unfortunately unacquainted. Towards evening a few carriers came into the camp with three wallabies, which they had run down with their dogs. Heni-Keni worked hard in skinning one, but soon tired of this business, as I was too busy with the birds and could not give him much assistance. I boiled the heads of the other two for the sake of their skulls, while the men roasted and ate the bodies. The third and last day's march began about 9 A.M., and we arrived at Madiu about 3 P.M. The track was very tortuous and crossed endless ravines, down which flowed numerous small streamlets. The jungle became grander if possible than anything I had so far seen; and I observed many huge trees with their trunks split up into a network of roots some distance above the ground, while others were supported by means of huge flying buttresses. About midday the rain descended in torrents, and we became drenched and thoroughly tired by the seemingly endless marching. At the summit of a high hill, cleared of bushes, we found a large house into which we entered, while the carriers went to a tumbledown shelter or squatted down under the flooring of the first building. The view from this spot was exceedingly fine—wide and very precipitous ravines and mountain-slopes, with hardly a sign of any clearing with the exception of the small village of Ihaevala. This lay some considerable distance off across a deep valley, and was just discernible through the jungle. Far away to the north-west stretched several ranges, with Mt. Yule on the horizon. But the view was frequently concealed during the day by clouds or showers of heavy rain. Next morning I paid off about twenty-four carriers with tobacco and large knives, and they departed in great haste, whooping with satisfaction, down into the valleys immediately below our camping-site. Aihegetta arrived in the afternoon with eleven carriers and brought a note from Stalker stating that he expected to join me in a few days' time. From this date till our return to the coast the villagers came in daily, bringing us bags of sweet-potatoes, bananas, taros, and sugar-cane as food for the camp, and we bartered for these commodities tobacco, salt, beads, or small strips of cloth. Our two gun-bearers were sent off to collect specimens, and I heard them banging away in the depths of the jungle. When they returned they proudly displayed one or two much-damaged small birds. They were rather disgusted when I limited their supply of cartridges and was not encouraging in my verdict on their marksmanship.

Word soon went round the country that a white man had arrived with some excellent "trade" to be bartered for various birds and beasts, but I had to wait a few days before serious business commenced.

I did a little butterfly-hunting along the track, but failed to secure a good collection. Several large species of Orthoptera were fairly common, but usually flew at heights far above my reach. The natives call these insects "Kow-pepper," which is a curious sounding name. Aihegetta's party soon left, but were replaced by another of five natives accompanied by a policeman. They came in from Dilava, and brought me two small snakes and a chameleon alive. Aihegetta became sick with fever, but I soon cured him by a few grains of quinine, and took a dose myself, though as time passed I gave it up and never felt the want of it again.

Before Stalker's advent I had stored all the heavy luggage under the house, and I was very glad when he walked into camp on the fifth day with the rest of the carriers and many store-boxes. He brought in a wounded Paradise-bird (*Paradisea raggiana*), which unfortunately did not survive the night, and a dead Channel-bill Cuckoo (*Scythrops novæ-hollandiæ*), both of which he had shot on his way up the mountain. The remainder of the carriers were soon paid off with cloth and tobacco and left camp, while we skinned the birds, pickled the reptiles, and made further arrangements regarding the house. The shooting boys were very keen to go afield again, but we decided that it would be inadvisable to have the jungle disturbed, so forbade them. As this district appeared to be fairly rich in bird-life we determined to give it a trial; and in order that no time should be wasted in having a house built for us, we set out for the Mission Station at Dilava to request permission to occupy the house where we were. Starting soon after breakfast, accompanied by Heni-Keni and a villager, we ultimately arrived after a hard march of about three hours at Dilava, from which high altitude we obtained a grand view of many spurs of the Owen-Stanley range (particularly Mt. Chamberlain far away on the horizon), and of a great number of deep valleys all densely covered with jungle. The missionaries, of whom there were seven, gave us a most cordial welcome and shewed us what they were cultivating in their gardens in the way of vegetables. We had some delicious oranges and some fresh milk, as they had a small herd of cows and also went in for poultry-farming. After a sumptuous repast and the receipt of much useful information regarding the birds of our district from the converts, which our genial hosts kindly interpreted for us, we found it necessary to bid them farewell and return to our camp. The day passed without rain, which was exceptional. Our request that we might occupy the mission-house at Madiu was immediately granted, and during our residence there we did our best to repair it and to keep it in good order. At no great distance from Epa the track led down to a river about eighty yards wide, but two of my staff led me safely across and I got wet only up to my middle, though close to Dilava a mountain torrent took a considerable amount of negotiation. By means of a fallen tree, across which we manœuvred Blondin-like, and by jumping from rock to rock we managed to reach the opposite bank, but I must say that after my last attempt I was glad we had no more of such obstacles to encounter. For the next three weeks our daily routine did not vary much. Live birds, mammals, and reptiles came in to such an extent that our collapsible cages were soon filled, and we had to build two large aviaries under the house. These measured roughly about 6 × 8 × 5 feet, and into one of them we turned all the

Hunstein's Paradise-birds, which soon became tame enough to feed from our hands. The other held several sorts of Doves and some Raggi's Paradise-birds. No single day passed without some addition to our collection, and in reviewing our united experience with European and other birds, Stalker and I agreed that we had never handled such confiding and fearless creatures as these. They would usually take food from our hands within three days of their capture. The Hunstein's Birds-of-Paradise were the first examples of this family brought in. The males clear a small open space on the ground in which to display their beautiful plumage to a number of admiring females. It is an easy matter for the natives, who are all aware of this habit, to arrange a net near these "dancing grounds" and at an opportune moment to frighten the birds into its meshes by a sudden shout and clapping of hands. We found that these birds were decidedly more delicate than the other species, but usually agreed very well amongst themselves when caged, and they were certainly more plentiful in this district than any of their other relatives. During our return journey from Dilava, Stalker fired at and missed a bird which must have been Lawes's Bird-of-Paradise (*Parotia lawesi*), but this was the only glimpse obtained of it in its wild state. We were therefore much delighted to receive afterwards at different dates about a dozen examples of this fine species. Unlike Hunstein's Paradise-bird, they were as hardy as we could wish and quickly became very tame. One specimen was slightly more adult than the others, having the six wires from the head of full length and the gorgeous cravat covering the throat well developed. It unfortunately died from some complaint affecting its eyes soon after reaching Sydney. Our natives could not appreciate our wish to receive hen Paradise-birds, the numbers of males far exceeding those of the latter sex. We had to offer double rewards for hens of *P. raggiana*, and even then we only obtained three specimens.

So far as we could discover, no birds are kept alive as pets in any of the villages in this particular district, as their habits in captivity and the trouble of attending to their wants would not appeal to any native. Pity does not enter into their considerations concerning anything they capture, and to prevent escape their victim, whether a grasshopper or one of their own kith and kin, usually has the legs broken. Single examples were brought to us of *Lophorhina minor*, *Pitta mackloti*, and *Rhectes dichrous*, but owing to rough treatment at the hands of their captors these fine birds died within a day or so of reaching us. The same remark applies to a pair of exquisite Pigmy Parrots (*Nasiterna*), which to my great annoyance had been put in a cage with some large Pigeons, a Cat-bird, and other species, and were therefore only just alive when they reached camp. Although the missionaries at Dilava had obtained for us many of the vernacular names of various birds, we supplemented them by a small collection of drawings of such species as we imagined might be found in the locality. These pictures were a source of great interest to the villagers, and were so readily recognised that we were supplied with examples of several of the birds that were portrayed for their guidance. One of the Bower-birds (*Æluredus melanocephalus*) which we were rather anxious to possess, and which, as we were given to understand, was not uncommon, was shortly afterwards added to our acquisitions, but only six specimens of it came in. A few examples of *Amblyornis subalaris* and *Phonygama purpureo-violacea* and a single *P. chalybeata* also increased our collection. The first-named were delicate and we had very great difficulty in keeping a couple of the females alive; but the Manucodes were as strong as *Parotia lawesi*, and soon developed murderous tendencies towards each other, necessitating separate cages. The villagers one day brought me a young Cassowary, and we were rather puzzled for some time as to where we should keep it. We got our boys to construct a large run, which they quickly completed, and into this we put our captive, feeding it daily on figs, rice, and sweet-potatoes. But it ultimately escaped and the search-parties failed to recapture it. The natives called it "Coco-Coco" and "Veo." To our mammal-series we added several specimens of the Three-striped Phalanger (*Dactylopsila* *trivirgata*), the Eastern Grey Cuscus (*Phalanger orientalis*), and other varieties of the latter family, with several species of rats which have not as yet been identified. Our spirit-jars were rapidly filling with crabs, frogs, chameleons, a few snakes, prawns, and other denizens of the jungle. In a very short time we had so many birds to deal with that we had absolutely no time to devote to shooting, and for that reason seldom stirred from the house. Even bread-making was voted a nuisance, and we often substituted biscuits for it. All our available cages and the two aviaries beneath the house now held as many inmates as was compatible with safety, so we began the construction, with the help of our staff and numerous villagers, of a very large aviary for additions, which, however, time did not permit us to complete.

New Guinea is not connected with Australia by cable, and steamers only call at Yule Island every tenth week, while a schooner brings the mails every fifth week. To entrust such delicate freight as birds to a schooner was not to be thought of, so that we had to settle the question whether we could catch the steamer that called at the island on April 19th. This meant that our collecting must end within less than a month of our arrival at Madiu. Nevertheless, considering the numerous birds which we had on hand and continued to receive daily, we thought it better to make active preparations for departure. Orders were therefore sent far and wide declining to receive further specimens, as we were very doubtful whether enough natives could be obtained to carry what we already had down to the coast. About a week before commencing our return-journey our boys were busily engaged in making reed cages for the various birds, which with the other cages previously brought out from England numbered twenty-three in all, and there were other packages besides. The bulk of our stores were left in our house, as Stalker proposed to return there when I had joined the steamer at Yule Island with the birds, and intended proceeding further inland in pursuit of the magnificent Prince Rudolph's Bird-of-Paradise (*Paradisornis rudolphi*).

On April 14th we were up before daylight attending to the last of the packing; then, after fixing the cages to long poles slung between two men, I led off at 8.30 A.M. with the birds, while Stalker followed with our impedimenta. We reached Eikeiki about 3.30 P.M., much tired with the long march, and just escaped the rain which fell heavily soon afterwards. Next day I got ahead of our noisy followers with my gun-bearer and shot a fine Zoe's Fruit-Pigeon (*Carpophaga zoeæ*). When we arrived at Epa a native missionary residing there gave us some fresh bread, and I tried some fried wallaby-meat, which was palatable enough, though somewhat tough. I observed plenty of beautiful butterflies in this district, and spent a little while in the village, which did not differ much from others that we had already seen. Signs of revolt here arose amongst our carriers, but Stalker threatened to report them to the police, and they then came along quietly for the last march. This part of the journey was one of the most trying that I have ever undertaken, as we had received word from Bowden that the whale-boat and canoes would meet us below Bioto, and we therefore took a slightly different route to our former. We continually descended through the marvellous jungle and open patches of country until we found ourselves in a mangrove-swamp, where the mosquitoes became most annoying in their attentions. For a long while I fully believed that we had lost the way. The daily rains had flushed the banks of all the streams, and as a natural consequence the swamp was rendered more difficult to traverse than at other seasons, so that I was happy to arrive at last at the small village of Nikora about 2 P.M. I immediately ordered fresh cocoanuts and had a change of clothing, Stalker arriving about an hour later, when we enjoyed some lunch and made preparations for a night's lodging. We were allowed but a short rest, however, for news was brought in that the whale-boat and canoes were awaiting us in a creek, having been sent up a day earlier than I had arranged with Bowden. Luckily we were within about two miles of the river, and we soon put our stores aboard the whale-boat, while the bird-cages were placed carefully on a canoe, and in the midst of a very steady downpour of rain and heavy thunder overhead we paid off our carriers with a tomahawk each for the three days' march, with which they were quite satisfied. A canoe then took us off to the whale-boat lying outside the creek, and away we rowed for Yule Island. During the passage everything got soaked, but the birds, which had been well covered up with mackintosh-sheeting, came across the sound without wetting a feather. Bowden greeted us from his verandah, and we were very sorry to find him just recovering from an attack of fever. We again took possession of his house, and he was astonished to see the results of our labours, and gave us a most hospitable reception.

The s.s. 'Moresby' (Burns, Philp, & Co.) did not arrive till the 21st, when we went early aboard to make arrangements for the accommodation of the birds. I borrowed the launch to take my luggage and cages from the island, and about 1 P.M. bade farewell to Bowden and Stalker, much to my regret. Reaching Cooktown on the third day I had great trouble in trans-shipping my precious freight, as regulations prohibiting the importation of birds, beasts, and plants into Queensland were in force. I despatched an urgent request to the Secretary for Agriculture at Brisbane for permission to proceed, and received his sanction just in time to catch the s.s. 'Wodonga,' of the A.U.S.N. line, to Sydney.

During the remainder of our fortnight's passage, which as regards weather was very enjoyable, the vessel put into many ports, and on May 4th landed me at Sydney. Here, in accordance with arrangements previously made, I took the whole of the collection off to the Zoological Gardens, where the authorities most kindly placed some large aviaries at my disposal, and the collection during its stay attracted many visitors. I owe a great deal to Mr. H. E. Peir, a well-known Aviculturist, for much excellent advice and assistance at Sydney. He took charge of some of my more delicate specimens, of the health of which I had some doubts. Before leaving New Guinea I received two splendid Rifle-birds (*Ptilorhis intercedens*), but one of them unfortunately died of a wound in the thigh. The second was always very shy, and caused me more anxiety than any of the other birds that I brought out of the country.

I left Sydney on May 24th, with the collection in new and more commodious cages. I greatly dreaded crossing the Great Australian Bight, as the winter was advancing and I anticipated rough weather. As events turned out, it proved the most dangerous part of my long journey, and I had some fatalities that I could ill afford. At every port of call I obtained bananas, oranges, and other fruits easily enough, while I received the greatest courtesy from the Captain and Officers of the P. & O. s.s. 'Victoria' all the way home. Travelling through France, I reached London on June 28th and immediately handed over my collection to the authorities of the Zoological Society.

APPENDIX.

List of Paradise-birds brought home by Mr. C. B. Horsbrugh and Mr. W. Stalker in 1908 from British New Guinea.

July 3rd, 1908.

7 Raggi's Bird-of-Paradise (*Paradisea raggiana*).
7 Lawes's Bird-of-Paradise (*Parotia lawesi*).
8 Hunstein's Bird-of-Paradise (*Diphyllodes hunsteini*).
4 Manucodes (*Phonygama purpureo-violacea* and *P. chalybeata*).
1 New-Guinea Rifle-bird (*Ptilorhis intercedens*).
3 Black-headed Cat-birds (*Ælurœdus melanocephalus*).
2 Subalar Bower-birds (*Amblyornis subalaris*).

October 5th, 1908.

1 Prince Rudolf's Bird-of-Paradise (*Paradisornis rudolphi*).
5 Count Raggi's Bird-of-Paradise (*Paradisea raggiana*).
10 Hunstein's Bird-of-Paradise (*Diphyllodes hunsteini*).
2 Violet Manucodes (*Phonygama purpureo-violacea*).
1 New-Guinea Rifle-bird (*Ptilorhis intercedens*), ♀.
7 Lawes's Bird-of-Paradise (*Parotia lawesi*).
1 Black-headed Cat-bird (*Ælurœdus melanocephalus*).

X.—*On the Birds of Kohat and Kurram, Northern India.* By Lieut. C. H. T. Whitehead, Indian Army. *With an Introduction by* Major H. A. F. Magrath, Indian Army. —Part II *.

[558.] Hemichelidon sibirica. The Sooty Flycatcher.

Fulton, J. B. N. H. S. xvi. p. 50 (Chitral, 4000 ft.); Rattray, t. c. p. 427 (common above 8000 ft. on Murree Hills); Ward, op. cit. xvii. p. 479.

250. ♂ ad. Kohat, 1768 ft., 9th May.

Capt. Keen shot this bird in our garden on the 8th of May. In the course of the following week I came across several more. It nests commonly in the forests of the Safed Koh up to tree-limit.

[561.] Siphia parva. The European Red-breasted Flycatcher.

Marshall, J. B. N. H. S. xiv. p. 603 (Quetta: common in April); Fulton, op. cit. xvi. p. 50 (common in Lower Chitral in winter, leaving in mid-April).

715. ♂ ad. Kohat, 1768 ft., 20th March.

Major Magrath has made the following notes on this species:—"A winter visitor abundantly reinforced during the spring migration. The rush north-west is at its height in the middle of April and continues till the end of the month. The last birds remain till well into May. The adult males are the first to leave, the females and immature birds following two or three weeks later. The return migration commences in October. Few examples with chestnut breasts are to be seen at this season. This Flycatcher constantly descends to the ground to take its prey."

In autumn I have seen it as early as Sept. 13th. We did not meet with a single adult male in winter, the first appearing about the middle of March.

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* Continued from above, p. 134. The arrangement and nomenclature followed are those of Oates and Blanford's "Birds" in the 'Fauna of British India.' The numbers in square brackets before each name are the same as in that work.

[567.] CYORNIS LEUCOMELANURUS. The Slaty-blue Flycatcher.

Ward, J. B. N. H. S. xvii. p. 480 (very plentiful in Kashmir).

627. ♂ ad. Kohat, 1850 ft., 1st March.

This solitary example was the only one met with. Its alarm-note (*tit-it-it*) attracted my attention.

[568.] CYORNIS SUPERCILIARIS. The White-browed Blue Flycatcher.

Rattray, J. B. N. H. S. xvi. p. 427 (common in Murree Hills); Ward, op. cit. xvii. p. 480 (plentiful).

528. ♂ ad. Kurram Valley, 7500 ft., 24th April.

A rare bird. I shot one near Kohat on the 13th of April, and this was the only example seen in the plains. A second I got near the Peiwar Kotal, and believe that I heard one or two more close by.

[*Culicicapa ceylonensis* (Sw.). Major Magrath shot an example of this species, which is now in the National Collection, in Bannu, in October, and has since found it a fairly common winter visitor.]

[589.] ALSEONAX RUFICAUDUS. The Rufous-tailed Flycatcher.

Fulton, J. B. N. H. S. xvi. p. 50 (shot two in April); Ward, op. cit. xvii. p. 480 (breeds at high altitudes in Kashmir).

Abundant in summer on the Peiwar Spur, and in the Spin Khwar Nullah of the Safed Koh, from 8000 to 11,000 feet. As Major Magrath has pointed out, it is quite likely that this species occurs in Kohat in winter, but, from its remarkable likeness to the female *Ruticilla rufiventris*, has been overlooked. It may be distinguished from the latter by its not shaking its tail. It is a good songster with a great variety of notes.

[598.] TERPSIPHONE PARADISI. The Indian Paradise-Flycatcher.

Marshall, J. B. N. H. S. xiv. p. 606 (shot one in May near Quetta); Fulton, op. cit. xvi. p. 50 (an uncommon summer visitor up to 5000 ft.); Ward, op. cit. xvii. p. 480 (common in summer).

A fairly common summer visitor, arriving early in April, leaving towards the end of September, and nesting freely in the shady orchards of Kohat.

[608.] PRATINCOLA CAPRATA. The Pied Bush-Chat.

Rattray, J. B. N. H. S. xii. p. 339 (Thall: scarce); Marshall, op. cit. xiv. p. 603 (Quetta: common in summer); Fulton, op. cit. xvi. pp. 50 & 744 (resident in Chitral); Cumming, t. c. p. 687 (Seistan: a scarce summer visitor); Betham, t. c. p. 750 (common); Ward, op. cit. xvii. p. 480 (rare in Kashmir).

A fairly common summer visitor from the second week in March till October, but not found much above 3000 feet in the Kurram Valley.

[610.] PRATINCOLA MAURA. The Indian Bush-Chat.

Rattray, J. B. N. H. S. xii. p. 339 (abundant at Thall in April); Marshall, op. cit. xiv. p. 603 (a few at Quetta in April); Fulton, op. cit. xvi. pp. 50 & 744 (shot one at 6000 ft.); Rattray, t. c. p. 467 (common in Murree); Ward, op. cit. xvii. p. 480 (common up to 7000 ft.).

722. ♂ ad. Kohat, 1768 ft., 21st March.

Passes through Kohat in force from February till mid-May, returning in small numbers in August and September; a few stragglers remain for the winter. Nests freely on the Samana and in the Kurram Valley from 5000 to 7000 feet. I have shot a recently fledged young bird as high as 9000 feet.

[618.] SAXICOLA PICATA. The Pied Chat.

Marshall, J. B. N. H. S. xiv. p. 480 (Quetta: common summer visitor); Betham, op. cit. xvi. p. 750 (nests freely); Ward, op. cit. xvii. p. 480 (scarce: Kashmir); Perreau, op. cit. xviii. p. 186 (occurs in Chitral).

A fairly common winter visitor to the District from October till the end of March, chiefly frequenting stony wastes and hill-sides, and particularly common between Lachi and Latammar. Nests freely on the Samana. Capt. Keen found a nest on the 14th of May containing six fresh eggs. A beautiful songster, singing both on the wing and on the ground.

[619.] Saxicola capistrata. The White-headed Chat.

Rattray, J. B. N. H. S. xii. p. 339 (common in winter at Thall: many young birds seen at Parachinar in July); Marshall, op. cit. xiv. p. 603 (shot one at Sibi, 5000 ft., in Feb.); Fulton, op. cit. xvi. p. 50 (occurs in Chitral in summer from 7000 to 11,000 ft.); Cumming, t. c. p. 687 (shot one in March: Seistan).

302. ♂ juv. Parachinar, 5700 ft., 7th July.
435. ♀ ad. Banda, 1900 ft., 27th January.

A cold-weather visitor to the District and very abundant from the third week in August till April, frequenting both desert country and open cultivated lands and especially common by the roadside. In the Kurram Valley it nests freely round Parachinar from 4500 to 6500 feet, but rarely as high as 9000 feet. The nest, a neat grass structure, is usually placed in a hole in the bank of a nullah or under a stone in the nullah-bed, occasionally in a cairn of stones. The eggs are pale blue, varying a good deal in shade, marked with red spots also varying much in shade and distribution, and average ·79 in. × ·53 in. The full clutch is five. Two broods at least are reared in the season.

[620.] Saxicola opistholeuca. Strickland's Chat.

Fulton, J. B. N. H. S. xvi. p. 50 (the commonest bird in Chitral, moving up or down according to season); Ward, op. cit. xvii. p. 480 (migrates through Baltistan).

433. Ad. Hangu, 2700 ft., 27th December.

A fairly common cold-weather visitor from September to the middle of April, keeping chiefly to stony ground. It migrates through the Kurram Valley in April.

[624.] Saxicola œnanthe. The Wheatear.

Ward, J. B. N. H. S. xvii. p. 481, & xviii. p. 461 (one shot in Wardwan in Sept. 1907); Perreau, t. c. p. 186 (occurs in Chitral, specimen shot).

702. ♀. Kohat, 1768 ft., 18th March.

This was the only example secured, but, owing to its close resemblance to the following species, the bird has probably been overlooked.

[625.] Saxicola isabellina. The Isabelline Chat.

Rattray, J. B. N. H. S. xii. p. 339 (Thall: found a nest at 4000 ft.): Marshall, op. cit. xiv. p. 603 (common in summer, nesting down holes); Cumming, op. cit. xvi. p. 688 (Seistan: fairly common in spring); Betham, t. c. p. 748 (Quetta: numerous, nesting in rat-holes); Ward, op. cit. xvii. p. 481 (Baltistan).

A common cold-weather visitor to the desert parts of the District from August till April.

[626.] Saxicola deserti. The Desert Wheatear.

Marshall, J. B. N. H. S. xiv. p. 603, & xv. p. 355 (Quetta: found a nest with young in a bank); Cumming, op. cit. xvi. p. 688 (one shot in January); Ward, op. cit. xvii. p. 481, & xviii. p. 462 (occurs in Kashmir in spring and in Ladak in summer).

618. ♀ ad. Kohat, 1760 ft., 28th February.

Fairly common from November till the third week in March, but not such an exclusive haunter of the desert as some of its allies, being frequently met with about cultivated lands.

[628.] Saxicola chrysopygia. The Red-tailed Chat.

Watson, J. B. N. H. S. xv. p. 145 (shot in September near Chaman); Perreau, op. cit. xviii. p. 186 (Chitral).

Common in the cold weather from September to mid-April about low stony hills.

[638.] Chimarrhornis leucocephalus. The White-capped Redstart.

Rattray, J. B. N. H. S. xii. p. 340 (January); Fulton, op. cit. xvi. p. 744 (rather rare); Ward, op. cit. xvii. p. 481 (common in Kashmir).

Occurs in the Miranzai Valley from Raisan upwards from October to the middle of April, but is somewhat rare. Abundant, however, in summer along the torrents of the Safed Koh up to tree-limit.

[642.] Ruticilla erythronota. Eversmann's Redstart.

Marshall, J. B. N. H. S. xii. p. 603 (common in winter); Ward, op. cit. xvii. p. 481 (occurs in spring).

51. ♀ ad. Raisan, 2360 ft., 25th December.

100. ♂ ad. Kohat, 1760 ft., 4th February.

Fairly common, especially in the Miranzai Valley, from December till March, and on the Samana from October till the end of March, chiefly frequenting scrub-jungle, olive-groves, and avenues. The call is a peculiar croaking note sounding like *gre-er*. The male assumes nearly full breeding-plumage before leaving. Not observed in the Kurram Valley.

[644.] Ruticilla rufiventris. The Indian Redstart.

Marshall, J. B. N. H. S. xiv. pp. 603, 605 (a common resident up to 11,000 ft. in summer); Fulton, op. cit. xvi. p. 51 (common from 9000 to 14,000 ft. in July); Ward, op. cit. xvii. p. 481 (nests in Ladak).

A winter visitor, abundant from September to mid-April, but only occurring on the Samana on passage. A few pairs nest on the Safed Koh above 10,000 feet. The nest is usually well concealed under a stone or sometimes in a hollow in a bank, and is made of bents and grass lined with hair. The eggs are very pale blue without markings, and vary much in size. The full clutch appears to be five.

[646.] Rhyacornis fuliginosus. The Plumbeous Redstart.

Fulton, J. B. N. H. S. xvi. p. 51 (a common resident in Chitral from 4000 to 7000 ft.); Rattray, t. c. p. 428 (common in the Galis); Ward, op. cit. xvii. p. 481 (very common on all hill-streams).

660. ♀. Kachai, 2700 ft., 9th March.

Major Magrath observed this Redstart by the Khanki River at Raisan in October 1905; this is the only example of the species we have noted besides that which I procured at Kachai.

[647.] CYANECULA SUECICA. The Bluethroat.

Marshall, J. B. N. H. S. xiv. p. 603 (common in March and April at Quetta); Fulton, op. cit. xvi. p. 51 (common in September and October); Ward, op. cit. xvii. p. 481 (common in Kashmir).

Passes through the District and up the Kurram Valley in large numbers from March till the end of May. The return passage, commencing in the last week of August, is at its height in September. A certain number of immature birds winter in Kohat, and are then chiefly found in the reedbeds.

[654.] IANTHIA RUFILATA. The Red-flanked Bush-Robin.

Ward, J. B. N. H. S. xvii. p. 481, & xviii. p. 462 (breeds in Kashmir).

95. ♀ ad. Kohat, 1760 ft., 21st January.

669. ♂ ad. Kachai, 2700 ft., 12th March.

A rare winter visitor to the Samana and the orchards of Kohat and Miranzai. Capt. Keen was the first to meet with it. Fairly numerous on the wooded slopes of the Safed Koh from 8000 to 10,000 feet in summer. The call-note resembles the syllable *prōt*, the mate answering *ēē* (both notes are used by the two sexes).

[657.] ADELURA CÆRULEICEPHALA. The Blue-headed Robin.

Fulton, J. B. N. H. S. xvi. p. 51 (resident: Chitral); Rattray, t. c. p. 428 (very rare, nests in holes in stumps: Murree Hills); Ward, op. cit. xvii. p. 481 (occurs in April: Kashmir).

A winter visitor to the District from December till mid-March, and to the Samana from the first week in November till the end of March, but in varying numbers. In 1906 and 1907 it was fairly common, but in 1908 I only met with one specimen. Usually frequents olive-groves and gardens, and on the Samana scrub-jungle. In the woods of the Safed Koh, however, it is abundant in summer from 7500 to 12,000 feet. It has the tame and confiding habits of the Redbreast, and the same way of quivering the tail. The alarm-notes, too, are very similar. The two nests that I came across might well have been those of the Redbreast. The first was placed on the ground under shelter of a juniper-root (not in a hole) at 11,000 feet, and contained three eggs just hatching; they were cream-coloured, with a darker zone near the larger end, and differed a good deal in size. The second was in a similar position at 8000 feet, and had four eggs of similar type, but very faintly tinged with green and slightly smaller, averaging ·68″ × ·48″.

[661.] THAMNOBIA CAMBAIENSIS. The Brown-backed Indian Robin.

Rattray, J. B. N. H. S. xii. p. 340 (a common resident); Ward, op. cit. xvii. p. 481.

686. ♂ ad. Kohat, 1760 ft., 16th March.

A fairly common resident in the plains. As Major Magrath notes, it differs from its down-country relatives in shunning gardens and cultivated spots, preferring arid stony localities, and shewing a marked partiality for graveyards. It does not ascend the hills to any height, and in the Kurram Valley we did not find it above 3000 feet.

[666.] MERULA MAXIMA. The Central Asian Blackbird.

Ward, J. B. N. H. S. xvii. p. 482 (breeds in Kashmir at high altitudes).

295. Juv. Safed Koh, 10,500 ft., 1st July.

Bill, gape, and eyelid brownish yellow; tarsus fleshy brown; iris brown.

Apparently very rare, this example being the only one met with. In July 1908 I found this fine bird fairly common outside our limits near the head of the Kághán Valley (Hazara, N.W. F. P.), between 12,000 and 13,500 feet, either in parties of from three to ten, or occasionally alone. It was very wild, and it was with difficulty that I procured three examples (now in the British Museum). I never heard it utter the rattling alarm-cry of *M. vulgaris*, but only the low chuckle characteristic of the genus. Usually found feeding on small white caterpillars, which were very common on the grassy slopes, or amongst rocks, but sometimes in juniper-scrub.

[672.] Merula castanea. The Grey-headed Ousel.

Rattray, J. B. N. H. S. xvi. p. 657 (abundant in the Murree Hills): Ward, op. cit. xvii. p. 482 (occurs in Kashmir in varying numbers).

598. ♀ ad. Kohat, 1760 ft., 18th February.

657. ♂ ad. Hangu, 2600 ft., 8th March.

Fairly common from November till April in the wooded nullahs of the Samana in company with flocks of *M. atrigularis*. A few individuals occur in the Miranzai Valley and in the orchards of Kohat in February and March.

I met with a family-party on the 9th of August on the Safed Koh at 8000 feet.

[674.] Merula fuscata. The Dusky Thrush.

Major Magrath shot a specimen of this Thrush on the 7th of April in his garden at Bannu; the skin is now in the British Museum. On seeing it I was struck by its resemblance to one which Capt. Keen shot for me at Kohat the previous winter (22nd March, 1906), about which I made the following notes at the time: "Differs from *H. atrigularis* in the throat and cheeks being light brown tinged with red, turning to blackish on the upper breast." Unfortunately I had no time to skin it.

Major Magrath has sent me the following extract from his pocket-book made near Kohat and dated April 6th, 1905:—"A Thrush, upper parts like *M. atrigularis*, abdomen and vent white; the throat I could not see; a *broad buff supercilium*." So it seems probable that it is also a winter visitor to Kohat. Oates records it as a rare winter visitor to North-eastern India only.

[677.] Merula atrigularis. The Black-throated Ousel.

Marshall, J. B. N. H. S. xiv. p. 603 (very common); Fulton, op. cit. xvi. p. 51 (one shot in April); Ward, op. cit. xvii. p. 482 (abundant in winter).

578. ♀ ad. Kohat Pass, 3000 ft., 12th February.

These birds were abundant on the Samana and in the Miranzai Valley from October to the middle of April, but their further movements towards the plains depend a good deal on the weather. In the severe winter of 1904–05 Major Magrath noted them at Kohat in large numbers as early as December, but in the following year, which was mild, we did not observe them till February, and then only a few.

Not met with in the Kurram Valley.

[691.] Petrophila cinclorhyncha. The Blue-headed Rock-Thrush.

Fulton, J. B. N. H. S. xvi. p. 51 (shot one in May: Chitral); Rattray, t. c. p. 657 (nests freely round Murree); Ward, op. cit. xvii. p. 482 (plentiful in Kashmir).

A rare cold-weather visitor to the District from September till May. A few nest on the Safed Koh.

[693.] Petrophila cyanus. The Western Blue Rock-Thrush.

Marshall, J. B. N. H. S. xiv. p. 603 (a fairly common summer visitor); Fulton, op. cit. xvi. p. 51 (a summer visitor, not common); Rattray, t. c. p. 657 (rare: Murree Hills); Ward, op. cit. xvii. p. 482 (occurs in summer).

A rather scarce winter visitor from October till mid-April, keeping almost entirely to low rocky hills and generally seen singly or in pairs. Breeds on the Samana and in the Kurram Valley above 5000 feet.

[694.] Monticola saxatilis. The Rock-Thrush.

Marshall, J. B. N. H. S. xiv. p. 603 (one in January and one in April); Fulton, op. cit. xvi. p. 52 (shot two in autumn); Ward, op. cit. xvii. p. 482 (occurs in Baltistan in summer).

I have only once met with this species, and that was on the 6th of September in a stony valley near Kohat, when the autumn migration was at its height. I got a good view of it through my glasses, but unfortunately did not secure it.

[695.] Turdus viscivorus. The Missel-Thrush.

Marshall, J. B. N. H. S. xiv. p. 604, & xv. p. 355 (a resident in the hills round Quetta); Fulton, op. cit. xvi. p. 52 (resident in Chitral); Ward, op. cit. xviii. p. 482 (resident and common).

In the severe weather of January 1905, Major Magrath observed one in an orchard at Kohat, and Mr. Donald's bird-catchers caught two on the grass-farm about the same time. None have been seen there since.

In the Kurram Valley it nests not uncommonly amongst the firs and Deodars of the Peiwar spur, and in the Spin Khwar Nullah from 7000 to 9000 feet.

[697.] TURDUS ILIACUS. The Redwing-Thrush.

Mr. Oates writes (Fauna Brit. Ind., Birds, ii. p. 156):—"I have not been able to examine any specimen of Redwing obtained in India, and I admit the species on the authority of Jerdon, who states that at the time he wrote it had been lately found in the Himalayas, though very rarely. But at Kohat," he adds, "as I am assured by Mr. Blyth, according to a very good observer, the late Lieut. Trotter, it is a regular winter visitant in large flocks." Major Magrath and I have looked in vain for this species for the last three winters. Possibly the flocks of Calandra Larks (*Melanocorypha bimaculata*) were mistaken for Redwings.

[709.] CINCLUS ASIATICUS. The Brown Dipper.

Fulton, J. B. N. H. S. xvi. p. 52 (not uncommon from 4000 to 10,000 ft.); Ward, op. cit. xvii. p. 482 (very common in Kashmir).

Occurs along the larger streams of the Safed Koh up to 9000 feet, but is scarce. I shot a strong flying young bird on the 27th of June.

[712.] ACCENTOR RUFILATUS. The Red-sided Accentor.

Accentor rufilatus Sharpe, Cat. Birds B. M. vii. p. 664 (1882).

Accentor nepalensis (part.) Oates, Faun. Brit. Ind., Birds, ii. p. 166.

Ward, J. B. N. H. S. xvii. p. 482 (occurs in Ladak and Baltistan); Perreau, op. cit. xviii. p. 186 (Chitral).

274. Sex? Samana, 6500 ft., 5th April.

296. Sex? Safed Koh, 12,300 ft., 1st July.

A rather rare winter visitor to the Samana from the beginning of November till April, generally found singly about cliffs or on steep stony slopes, but never much below 6000 feet.

Nests freely on the Safed Koh above 12,000 feet. I came across the first nest on the 1st of July, 1906; it was placed under a rock on a steep slope, and contained three fresh eggs closely resembling those of our Hedge-Sparrow, but larger, averaging ·88″ × ·57″. The fabric was beautifully made of grass and roots, lined with moss and a little fur. On the 28th of July I came on two more nests built in crevices in cliffs, each containing two young ones, the most noticeable feature about them being their bright red gapes. This is not the first record of the nest. Mr. Stuart Baker writes that he has an authenticated clutch of eggs in his collection from Ladakh, taken previously to mine, though he adds that his is that of *A. nepalensis*, as he does not recognise *A. rufilatus* as a good species.

[713.] ACCENTOR HIMALAYANUS. The Altai Accentor.

Ward, J. B. N. H. S. xvii. p. 482 (large flocks pass through Kashmir in spring).

132. ♀ ad. Samana, 6500 ft., 7th March.
361. Sex ? ,, ,, 5th April.

A visitor to the Samana from December till the middle of April. Usually to be seen in large flocks, busily feeding amongst stones, near the Fort. Major Magrath procured the first examples of both this and the last species.

[716.] THARRHALEUS ATRIGULARIS. The Black-throated Accentor.

Marshall, J. B. N. H. S. xiv. p. 604 (shot one in January); Fulton, op. cit. xvi. p. 744 (shot two in March); Ward, op. cit. xvii. p. 482 (common in spring).

66. ♀ ad. Kohat, 1760 ft., 5th January.

A common winter visitor to the District, arriving in October and leaving towards the middle of March. It closely resembles the Hedge-Sparrow in habits, but is somewhat gregarious.

[719.] THARRHALEUS JERDONI. Jerdon's Accentor.

Watson, J. B. N. H. S. xv. p. 145 (small flocks occur in

January and March: Chaman); Ward, op. cit. xvii. p. 482 (breeds in Kashmir).

407. Ad. Samana, 6000 ft., 2nd December.

A winter visitor to the Samana (above 4000 feet) in small numbers; it frequents scrub-jungle, and is generally solitary; it is perhaps commoner than it appears to be, but it is such a terrible skulker one rarely gets more than a glimpse of it.

Nests fairly commonly on the Safed Koh, between 9000 and 12,000 feet, both in the forest and in Juniper-scrub. The alarm-note resembles the syllable *tir-r-r*.

[722.] PLOCEUS BENGALENSIS. The Black-throated Weaver-bird.

Rattray, J. B. N. H. S. xii. p. 340.

We have not met with this species in Kohat, but Col. Rattray records it from Thall, and writes as follows:—"Appeared suddenly about the beginning of June in all the reed-patches on the river-banks; they fly about in flocks of twenty or thirty birds. On 25th June, 1898, I found a nest containing three eggs much incubated . . . ."

Mr. Donald, the Political Officer, observed a flock in the reeds near Thall in March. Probably a resident species, moving locally up and down the river.

[734.] UROLONCHA MALABARICA. The White-throated Munia.

Rattray, J. B. N. H. S. xii. p. 340 (not common); Fulton, op. cit. xvi. p. 52 (summer visitor up to 4000 ft.: Chitral); Ward, op. cit. xvii. p. 483 (occurs in Kashmir).

A resident in the plains; abundant in summer, but becoming scarce in winter.

[758.] SPORÆGINTHUS AMANDAVA. The Indian Red Munia.

Rattray, J. B. N. H. S. xii. p. 340; Ward, op. cit. xvii. p. 483 (occurs in Jammu).

Colonel Rattray met with a few flocks of this species on the jheels (marshes) and amongst high grass near Thall. Mr. Donald, the Political Officer, who passes through Thall monthly on tour, tells me he has observed flocks in the reeds there at all seasons, and in August has seen parents going about with newly-fledged families.

[740.] COCCOTHRAUSTES HUMII. Hume's Hawfinch.

Fulton, J. B. N. H. S. xvi. p. 52 (shot 2 in May at 4000 ft.: Chitral).

50. ♂ ad. Raisan, 2360 ft., 25th December.
85. ♂ ad. Kohat, 1760 ft., 14th January.
638. ♂ ad. Hangu, 2700 ft., 3rd March.

A winter visitor to the District in fair numbers from October till mid-April, being especially common in the Miranzai Valley, but rare on the Samana. It generally occurs in small parties about wild olive-groves, orchards, and gardens, feeding on berries, seeds, and the kernels of fruit-stones. The call-note, which is frequently uttered, is a shrill *tee,* not at all what might be expected from such a big bird.

I met with a party of five on the 5th of May at 9000 feet on the Peiwar Spur; possibly the bird nests about there.

[741.] PYCNORHAMPHUS ICTEROIDES. The Black-and-Yellow Grosbeak.

Rattray, J. B. N. H. S. xvi. p. 657 (common: Murree Hills); Ward, op. cit. xvii. p. 484 (abundant); Perreau, op. cit. xviii. p. 186 (Chitral).

671, 672. ♂ ♂ ad. Hangu, 2700 ft., 12th March.

A common bird on the wooded slopes of the Safed Koh from 7000 to 11,000 feet, but shy, and its loud call-note, *préter-prē,* is more often heard than the bird seen. A few occasionally descend to the Miranzai Valley in winter.

[743.] PYCNORHAMPHUS CARNEIPES. The White-winged Grosbeak.

Marshall, J. B. N. H. S. xiv. p. 604 (common in the hills round Quetta); Ward, op. cit. xvii. p. 486, & xviii. p. 462 (resident, but scarce).

301. ♂ ad. Safed Koh, 8500 ft., 7th July.

Not nearly so common as the last species, but much bolder and less of a forest-bird, keeping more to the Juniper-scrub between 8000 and 12,000 feet. Frequently to be seen perched in some prominent position, uttering its familiar notes *wil-ye-go-ame* or *croak-et-et.* The flight is whirring and dipping like that of a Woodpecker. I found a nest containing two hard-set eggs on the 7th of July. It was beautifully made of twigs and bents, well lined with fresh strips of Juniper-bark. The eggs were of the Hawfinch type, of a French-white colour with strong reddish-brown markings, and averaged 1·18″ × ·72″.

[754.] PROPASSER DUBIUS (Prjev.). The White-browed Rose-Finch.

Fulton, J. B. N. H. S. xvi. p. 52 (April, 9000 ft. : Chitral); Ward, op. cit. xvii. p. 484, & xviii. p. 463 (common in spring, breeding in August near source of Sind River).

288. ♀. Safed Koh, 10,000 ft., 29th June.

Not uncommon on the Safed Koh in summer from 8000 to 11,000 feet. Apparently an early breeder. I came on a family very strong on the wing on the 29th of June. Its loud call *pwĭt, pwĭt* may be constantly heard, recalling somewhat the Paroquet's (*Palæornis*) screech, especially when a party wing their way overhead and all call together.

[757.] PROPASSER GRANDIS. The Red-mantled Rose-Finch.

Marshall, J. B. N. H. S. xiv. p. 604 (9000 ft. in May); Fulton, op. cit. xvi. p. 744 (fairly common in spring from 7000 to 9000 ft.) ; Ward, op. cit. xvii. p. 484 (Kashmir).

133. ♂ ad. Chikarkot, 2000 ft., 2nd March.
628. ♀ ad. Kohat, 1850 ft., 1st March.
649. ♂ ad. Hangu, 2700 ft., 6th March.

A winter visitor in small numbers to the Miranzai and Kohat Valleys. It is usually met with singly or in small parties about wild olive and camel-thorn (*Acacia machata*) groves, gardens, and cultivated spots, feeding on various tree-seeds, dandelion-flowers, &c. Call-note, *wír.* It was also observed on several occasions on the Safed Koh in July between 10,000 and 11,000 feet.

Tame and confiding in its habits.

[761.] CARPODACUS ERYTHRINUS. The Common Rose Finch.

Marshall, J. B. N. H. S. xiv. p. 604 (Quetta: common at 9000 ft. in May); Fulton, op. cit. xvi. p. 52 (common from 10,000 to 15,000 ft. in July, and at 5000 ft. in winter); Ward, op. cit. xvii. p. 484 (found everywhere).

179. ♂ ad. Kohat, 1760 ft., 3rd April.

Major Magrath has made the following notes on this species:—"Visits the district in considerable numbers on the spring and autumn migrations, passing through on the former in March and April, and on the latter in September and October, when mostly young birds are seen. A good deal of damage is done by this species to the fruit-trees, which it attacks by eating the buds after the manner of Bullfinches. The song may be rendered thus, *to-weet-tew*."

In the summer I found the bird abundant in several of the valleys of the Safed Koh from 6500 to 8500 feet, where in the early morning the loud though rather monotonous song resounds on all sides.

[763.] ERYTHROSPIZA GITHAGINEA. The Desert-Finch.

Perreau, J. B. N. H. S. xviii. p. 186 (one shot: Chitral).

88. ♂ ad. Kohat, 1760 ft., 18th January, 1906.

This example was procured by Major Magrath out of a small flock at the foot of the hills. Subsequently I frequently met with the birds, generally feeding on stony ground, but once in young crops. They are probably resident. I came across a pair near Thall on the 19th of May which, I believe, had a nest, but I failed to find it.

[764 B.] RHODOSPIZA OBSOLETA. The Persian Desert-Bullfinch.

Watson, J. B. N. H. S. xv. p. 145 (common in gardens in August and September and again in March: Chaman, 4450 ft., near Quetta).

74. ♂ ad. Kohat, 1760 ft., 8th January.

Oates (Fauna Brit. Ind., Birds, ii. p. 233) wrote that this species was likely to be found within Indian limits. Capt. Watson procured, I believe, the first authenticated examples in India, at Chaman. Subsequently Capt. Marshall and Major Betham found it common round Quetta, and the latter discovered a number of nests (*vide* Rep. of Baluchistan Nat. Hist. Soc. in J. B. N. H. S. xviii. p. 521). From the 8th of January till the 1st March, 1906, a flock frequented a Mohammedan cemetery near Kohat which was much overgrown with weeds, on the seeds of which they used to feed. The males had started singing by the 1st of March; the call-note may be rendered *worr*.

[767.] CARDUELIS CANICEPS. The Himalayan Goldfinch.

Marshall, J. B. N. H. S. xiv. p. 604 (Quetta: scarce); Fulton, op. cit. xvi. p. 53 (very common in summer up to 13,000 ft.); Ward, op. cit. xvii. p. 484 (the majority migrate through Kashmir, but a few stay to nest).

625, 626. ♀ ♀ ads. Kohat, 1760 ft., 29th February.

A winter visitor, occurring in large flocks from November till the middle of April. Its confiding habits are taken advantage of by the local bird-catchers, who snare large numbers, retailing them at 2*d.* or 3*d.* each.

One of the commonest birds on the Samana in winter. Capt. Keen tells me that a few stayed there all through the summer, and he believes nested in the neighbourhood.

We also observed a few in the Upper Kurram Valley in spring and summer.

[768.] CALLACANTHIS BURTONI. The Red-browed Finch.

Fulton, J. B. N. H. S. xvi. p. 53 (Chitral: summer visitor); Ward, op. cit. xvii. p. 484, & xviii. p. 463 (nests in Kashmir).

Not uncommon on the Safed Koh in summer between 8000 and 9000 feet. Its loud whistling call-note—*chew-ēē*—is very striking. It is usually uttered from high up on a bare branch.

Colonel Ward describes a nest taken from a fir-tree at 9000 feet as being very small and made of pine-needles; the eggs measured ·88″ × ·65″, and were of a greenish blue marked with dark brown spots at the larger end.

[771.] METOPONIA PUSILLA. The Gold-fronted Finch.

Marshall, J. B. N. H. S. xiv. p. 604 (Quetta: common on passage); Fulton, op. cit. xvi. p. 54 (resident in Chitral: nest at 12,000 ft. in July in birch-scrub); Ward, op. cit. xvii. p. 484, & xviii. p. 463 (breeds in Kashmir and Baltistan).

414. ♂ ad. Samana, 5600 ft., 13th December.

A rather rare winter visitor to the Samana, occurring in small parties, and sometimes in flocks of forty or fifty, from December till April. The flocks may be easily located by their incessant twittering (which resembles the syllables *brĭ-ĭ*).

Fairly common in summer between 8000 and 9000 feet on the Peiwar Spur.

[772.] HYPACANTHIS SPINOIDES. The Himalayan Greenfinch.

Rattray, J. B. N. H. S. xvi. p. 658 (nests fairly commonly in the Murree Hills); Ward, op. cit. xvii. p. 484 (Kashmir: common up to 8000 ft.).

409. Juv. Samana, 6500 ft., 6th December.

A few individuals are to be found in December and January in company with the flocks of Goldfinches on the Samana near Fort Lockhart, but the bird is not at all common.

[774.] FRINGILLA MONTIFRINGILLA. The Brambling.

Ward, J. B. N. H. S. xvii. p. 484 (passes through); Perreau, op. cit. xviii. p. 186 (one shot in Chitral).

134. ♀ ad. Hangu, 2700 ft., 3rd March.

Migrates through the District in small numbers early in March, associating with big flocks of Buntings. Not observed on the autumn passage.

FRINGILLA CŒLEBS. The Chaffinch.

135. ♀ ad. Hangu, 2700 ft., 3rd March.

I came across a pair of this species in an orchard near Hangu in March 1906 and secured one specimen. The following February I saw what I feel certain was another (a male), but in the excitement of the moment I missed it and never saw it again.

[775.] GYMNORHIS FLAVICOLLIS. The Yellow-throated Sparrow.

Rattray, J. B. N. H. S. xii. p. 340 (Thall: rather rare).

777. ♂ ad. Kohat, 1760 ft., 2nd April.

A common summer visitor to the District, arriving about the 1st of April. It usually breeds in trees, but the demand for nesting-sites seems to be greater than the supply, one nest that I found being built after the fashion of that of *Passer domesticus,* and placed conspicuously in the top of a thorn-bush. It contained four fresh eggs. I shot the hen on her return, to make quite sure of her identity.

[776.] PASSER DOMESTICUS. The House-Sparrow.

Rattray, J. B. N. H. S. xii. p. 340 (Quetta: common); Marshall, op. cit. xiv. p. 604 (very common, but in summer only); Fulton, op. cit. xvi. p. 54 (summer visitor only); Ward, op. cit. xvii. p. 485.

791. ♂ ad. Kohat, 1760 ft., 16th March.

755. ♂ ad. „ „ 27th March.

Major Magrath writes of this species in Kohat as follows:—"The usual pest and only too common. In April and early in May vast flocks of a migratory race of this species pass through the District in company with the next and the flocks of *Pastor roseus* already mentioned. Numbers of them are slaughtered along with the two latter. Does not winter on the Samana."

These two examples belong to a melanistic variety not uncommon round Kohat.

[778.] PASSER HISPANIOLENSIS. The Spanish Sparrow.

Watson, J. B. N. H. S. xv. p. 145 (large flocks from October till December: Chaman); Fulton, op. cit. xvi. p. 54 (passes through Chitral in April and October); Ward, op. cit. xvii. p. 485 (met with in July).

676. ♂ ad. Thall, 2550 ft., 14th March.

I will again quote from Major Magrath's excellent notes:—"Mixed up with flocks of the last species, numbers of the present occur on the spring migration. At the height of the migration vast flocks of Sparrows in company with flocks of *Pastor roseus* pour into the station at sundown to roost. The combined noise of these birds before they have settled down to sleep is indescribable, and the smell of them becomes quite appreciable and rather offensive. Gardens, hedges, and trees are disgustingly soiled by the rain of their excreta. Shooting the birds is encouraged in Cantonments at this time, and every sepoy who can procure a gun slaughters to his heart's content. But notwithstanding these drastic measures little mitigation of the nuisance is effected."

The spring migration sets in about the second week in March and continues till the middle of May, the return passage commencing early in August and continuing till October, but comparatively few examples are seen in autumn. A few stay for the winter, being fairly common then in the reed-beds and scrub round Lachi. None appear to breed in the Kurram Valley, but a large number pass through.

An example picked up by Major Magrath near Peiwar (6500 feet) had evidently been strangled by getting its head inextricably fixed between the primaries when preening itself.

[779.] Passer montanus. The Tree-Sparrow.

Rattray, J. B. N. H. S. xii. p. 340 (nests freely: Upper Kurram); Marshall, op. cit. xiv. p. 604 (a very common resident: Quetta); Fulton, op. cit. xvi. p. 54 (a common resident: Chitral); Cumming, t. c. p. 688 (abundant in April: Seistan); Ward, op. cit. xvii. p. 485.

714. ♂ ad. Kohat, 1850 ft., 20th March.

Common in winter in the Miranzai Valley, a few individuals occurring as low as Kohat and Banda. Mr. Donald found a nest with young in Doaba Station (3000 feet) in May and says that the bird nests regularly at Shinauri (3800 feet). It possibly also does so at Thall (2550 feet), where I observed a solitary example on the 18th of May. In the Upper Kurram this species and *P. domesticus* are present in about equal numbers in summer, and build alongside one another in houses; but the former, as noted by Capt. Fulton in his paper on "The Birds of Chitral," get the pick of the nesting-sites before the latter's arrival, and in many cases *P. domesticus* has to put up with holes in cliffs.

[782.] PETRONIA STULTA. The Rock-Sparrow.

Ward, J. B. N. H. S. xvii. p. 485 (winter visitor to Gilgit).

599. Ad. Banda, 2000 ft., 19th February.

Major Magrath first met with a flock of this species in February 1906 feeding in a stubble near Kohat. It is apparently a regular winter visitor, more common in the desolate country south of Banda than elsewhere. I found it very wary and generally feeding in young crops in flocks of fifteen or twenty.

[[785.] MONTIFRINGILLA ADAMSI Moore. Adams's Mountain-Finch.

I came on a small flock of Mountain-Finches on the 2nd of August on a grassy knoll at an altitude of 10,000 feet in the Safed Koh. From their markings and colouring I attribute them to this species, but they were rather wild and I did not secure one, and do not therefore feel justified in entering the species on the list.]

[787.] FRINGILLAUDA SORDIDA. Stoliczka's Mountain-Finch.

Fulton, J. B. N. H. S. xvi. p. 55 (common in summer from 10,000 to 14,000 ft.); Ward, op. cit. xvii. p. 485 (breeds in Kashmir).

136. Ad. Samana, 6500 ft., 7th March.

642, 645. ♂ ♂ ad. Samana, 6500 ft., 5th March.

643, 644. Ad. Samana, 6500 ft., 5th March.

During the intense cold in March 1906, when the snow was lying deep round Fort Lockhart, Major Magrath noticed small flocks of these birds picking up scraps round the cook-house door and shot one. They left when the snow melted. The following winter I was stationed there, but did not meet with a single specimen. In March 1908, however, I spent a couple of days there and found large flocks feeding on fallow land; curiously enough, the weather was comparatively warm then and there was no snow lying on the ground.

[789.] Emberiza schœniclus. The Reed-Bunting.

Watson, J. B. N. H. S. xv. p. 145 (December: Chaman); Ward, op. cit. xvii. p. 485, & xviii. p. 463 (Gilgit and near Srinagar).

126. Sex? Kohat, 1760 ft., 20th February.
593. Sex? „ „ 17th February.

Fairly common from November to March in reed-beds and irrigated crops and on the grass-farm, or occasionally in dry stubble and scrub-jungle. Varies much in size and coloration.

[792.] Emberiza leucocephala. The Pine-Bunting.

Marshall, J. B. N. H. S. xiv. p. 604 (common in winter); Ward, op. cit. xvii. p. 485 (occurs in early spring); Perreau, op. cit. xviii. p. 186 (specimen shot: Chitral).

52. ♀ ad. Raisan, 2300 ft., 25th December.
103. ♂ ad. Kohat, 1700 ft., 5th February.
640. ♂ ad. Hangu, 2700 ft., 3rd March.

A winter visitor, occurring in small flocks from December till March about cultivated places, often in company with *E. stracheyi.*

[793.] Emberiza stewarti. The White-capped Bunting.

Marshall, J. B. N. H. S. xiv. p. 604 (Quetta: common in summer); Fulton, op. cit. xvi. p. 55 (Chitral: very common from 5000 to 12,000 ft.); Rattray, t. c. p. 672 (Murree Hills: common); Betham, t. c. p. 832 (nests round Quetta); Ward, op. cit. xvii. p. 485 (rare).

648. ♂ ad. Darband, 2800 ft., 6th March.
725. ♂ ad. Kohat, 1760 ft., 22nd March.
778. ♂ ad. Kachai, 2700 ft., 1st April.

A common resident on the Samana and in the Kurram Valley, nesting up to 10,000 feet. In winter it is found in varying numbers throughout Kohat above 3000 feet, where-ever there is a good supply of grass and other seeds. During cold spells, however, and on migration large numbers appear in the plains, but they keep chiefly to scrub-jungle, olive-groves, and rock-valleys, avoiding cultivated spots.

[794.] EMBERIZA STRACHEYI. The Eastern Meadow-Bunting.

Watson, J. B. N. H. S. xv. p. 145 (one shot in November: Chaman); Fulton, op. cit. xvi. p. 55 (abundant from 4000 to 14,000 ft. according to season); Rattray, t. c. p. 672 (nests freely in the Murree Hills); Ward, op. cit. xvii. p. 485 (resident: Kashmir).

53. ♀. Raisan, 2300 ft., 25th December.
60. ♀. Kohat, 1760 ft., 2nd January.
124. ♀. ,, ,, 19th February.

A winter visitor to Kohat and by far our commonest Bunting from the second week in October till April, occurring at all elevations and on all sorts of ground, though more commonly about cultivated places than elsewhere. On the Samana it quite takes the place of *Passer domesticus* in winter. It nests fairly commonly on the Safed Koh up to 11,000 feet.

[795.] EMBERIZA BUCHANANI. The Grey-necked Bunting.

Marshall, J. B. N. H. S. xiv. p. 604 (common in April near Quetta); Ward, op. cit. xvii. p. 485 (a rare spring migrant); Perreau, op. cit. xviii. p. 186 (Chitral).

Not an uncommon species on the spring passage from the middle of April to the middle of May. It frequents stony ground covered with patches of scrub, usually singly or in pairs. On the autumn migration I only observed it once, viz. on the 16th of September. An example was forwarded from Bannu to the British Museum by Major Magrath.

[800.] EMBERIZA LUTEOLA. The Red-headed Bunting.

Marshall, J. B. N. H. S. xiv. p. 604 (a few seen in May in Chitral); Fulton, op. cit. xvi. p. 744 (a spring migrant).

534. ♂. Kurram Valley, 6800 ft., 27th April.

Passes through the District and up the Kurram Valley in force from mid-April till mid-May, returning in August and September. Major Wardlaw-Ramsay found this species nesting in the Hariob Valley, which drains into the Kurram Valley just west of our limits.

[802.] **Emberiza striolata.** The Striolated Bunting.

Marshall, J. B. N. H. S. xiv. p. 604 (not rare in summer: Quetta).

Rare. I met with a party of six or seven in some very desolate country between Lachi and Dhand on the 23rd of February, 1907, and shot one bird, which corresponded well with Oates's description.

[804.] **Chelidon urbica.** The House-Martin.

Rattray, J. B. N. H. S. xii. p. 340 (Thall: rare); Marshall, op. cit. xiv. p. 604 (Quetta: May); Ward, op. cit. xvii. p. 483 (breeds in Ladak).

Colonel Rattray shot a specimen at Thall on the 14th of May, 1898, out of a small flock. We have seen one or two flocks of what appeared to be this species, on spring migration, but have never shot an example.

[805.] **Chelidon kashmirensis.** The Kashmir Martin.

Fulton, J. B. N. H. S. xvi. p. 55 (Chitral: common in summer); Rattray, t. c. p. 659 (common in the Galis, nesting freely in verandahs: Murree Hills); Ward, op. cit. xvii. p. 483 (breeds in Kashmir).

Fairly numerous in summer along the Safed Koh Range, nesting either singly or in small colonies under overhanging crags from 6000 to 8000 feet. The nest resembles that of the last species, but varies considerably in size and shape according to the situation.

[808.] **Cotile riparia.** The Sand-Martin.

Fulton, J. B. N. H. S. xvi. p. 55 (Chitral: common in summer); Ward, op. cit. xvii. p. 483 (Kashmir).

The large Sand-Martin which migrates through Kohat in April and May must, I think, be of this species, though I have not shot an example. Major Magrath shot one out of a large flock on the autumn passage at Bannu, just south of our limits.

[808 a.] **Cotile diluta.** The Pale Sand-Martin.

Wyatt, Monogr. Hirundinidæ, p. 63.

437. ♀ ad. Khushalgarh, 1200 ft., 16th February.
679. Ad. Thall, 2550 ft., 14th March.

This species is distinguished from *C. riparia* by its paler colour, smaller size, and less sharply defined pectoral band.

It is probably widely distributed in India, but, owing to its resemblance to the last-named species, has been overlooked. In Kohat it is common enough and resident, large colonies nesting in the banks of the Indus and Kurram Rivers in February and March. The specimen, shot at Thall in March, was one of a breeding-colony. Major Magrath also found a large colony in March, nesting in the banks of the Kurram River (south of our limits), and secured two typical examples.

Besides these there are five specimens in the British Museum, viz. a doubtful one obtained by Jerdon at Madras, two from Afghanistan, and two from Central Asia.

[809.] Cotile sinensis. A resident species in the District.

[810.] Ptyonoprogne rupestris. The Crag-Martin.

Marshall, J. B. N. H. S. xiv. p. 604 (nests freely round Quetta); Fulton, op. cit. xvi. p. 55 (Chitral: summer visitor, found up to 13,000 ft.); Rattray, t. c. p. 659 (nests in the Murree Hills); Ward, op. cit. xvii. p. 483 (nests in Ladak).

277. Ad. Samana, 6500 ft., 12th April.

A winter visitor from October till April. Probably resident on the Samana. Fair numbers nest in the precipices of the Safed Koh.

[*Ptyonoprogne obsoleta.*—Major Magrath shot an example out of a flock at Bannu in December 1907.]

[813.] Hirundo rustica. The Swallow.

Rattray, J. B. N. H. S. xii. p. 341 (Murree Hills: a common resident); Marshall, op. cit. xiv. p. 605 (abundant in summer: Quetta); Cumming, op. cit. xvi. p. 688 (Seistan, 1700 ft.: summer visitor); Ward, op. cit. xvii. p. 483 (summer visitor: Kashmir); Perreau, op. cit. xviii. p. 186 (Chitral).

A fairly common resident in the Miranzai Valley, nesting freely at Thall (2550 ft.) and at Doaba, but becoming scarce in winter and temporarily disappearing in severe weather. A summer visitor to the Kurram Valley in small numbers.

Major Magrath has found this highly migratory species to be resident even in the hot plains of Bannu (1200 ft.) (*vide* 'Field,' March 28th, 1908).

[818.] HIRUNDO SMITHI. The Wire-tailed Swallow.

Rattray, J. B. N. H. S. xii. p. 341 (common); Ward, op. cit. xvii. p. 483 (summer visitor: Kashmir).

A summer visitor and abundant from April till October, the first birds arriving in the middle of March.

Occurs in the Kurram Valley up to 6000 feet, but only in small numbers.

[822.] HIRUNDO NEPALENSIS. Hodgson's Striated Swallow.

Marshall, J. B. N. H. S. xiv. p. 605 (summer visitor: Quetta); Rattray, op. cit. xvi. p. 659 (nests freely in the Galis).

Numbers pass up the Miranzai Valley in the first half of April. I shot an example at Hangu on the 9th, and found a retort-shaped nest under a bridge close by, though whether it belonged to this species or the next I did not discover, as I was only passing through.

[823.] HIRUNDO ERYTHROPYGIA. Sykes's Striated Swallow.

Rattray, J. B. N. H. S. xii. p. 341 (great numbers passed through Thall in the middle of May).

A small party of these Swallows arrived on the Samana towards the end of March 1907. On the 4th of April I shot one, the beak and part of the forehead of which were plastered with mud; it had evidently started nesting-operations.

[826.] MOTACILLA ALBA. The White Wagtail.

Marshall, J. B. N. H. S. xiv. p. 605 (Quetta: common in winter); Fulton, op. cit. xvi. p. 55 (Chitral: resident from 4000 to 10,000 ft., according to season); Ward, op. cit. xvii. p. 723 (rare in Kashmir).

Large numbers arrive in Kohat early in September, and a few stay though the winter; the majority pass on and return about the middle of February, again to disappear towards the middle of May.

[829.] Motacilla personata. The Masked Wagtail.

Watson, J. B. N. H. S. xv. p. 145 (fairly common in winter: Chaman, 4450 ft.); Fulton, op. cit. xvi. p. 56 (Chitral: resident from 6000 to 12,000 ft., according to season); Cumming, t. c. p. 688 (Seistan: April); Ward, op. cit. xvii. p. 723 (breeds from 6000 to 8000 ft.).

First arrivals at Kohat noted in the last week of August. Many individuals remain through the winter. This species leaves about the same time as the preceding. Nests commonly along the Kurram River from Thall (2550 ft.) upwards.

[831.] Motacilla maderaspatensis. The Large Pied Wagtail.

Rattray, J. B. N. H. S. xii. p. 341 (Thall: common, many stay to nest); Ward, op. cit. xvii. p. 723 (Kashmir).

A resident in Kohat, but scarce. A few pairs were noted along the Siau Nullah and the Kohat Toi.

[832.] Motacilla melanope. The Grey Wagtail.

Rattray, J. B. N. H. S. xii. p. 341 (Thall: rare); Marshall, op. cit. xiv. p. 605 (Quetta: a few seen at 7000 ft. in May); Fulton, op. cit. xvi. p. 56 (Chitral: March); Cumming, t. c. p. 688 (Seistan: very common); Ward, op. cit. xvii. p. 723 (common, and breeds in Kashmir).

A familiar cold-weather visitor, arriving in the plains towards the end of August. Nests freely along the streams of the Safed Koh from 6000 to 8000 feet.

[833.] Motacilla borealis. The Grey-headed Wagtail.

Marshall, J. B. N. H. S. xiv. p. 605 (Quetta: a few seen in April); Cumming, op. cit. xvi. p. 688 (common: Seistan): Ward, op. cit. xvii. p. 723 (Kashmir).

760. ♂ ad. Kohat, 1760 ft., 29th March.
771. ♂. „ „ 31st March.
782. ♂ ad. „ „ 3rd April.

Occurs on passage from March till mid-May, but not so commonly as the next species.

[835.] Motacilla beema. The Indian Blue-headed Wagtail.

Fulton, J. B. N. H. S. xvi. p. 56 (common in April); Ward, op. cit. xvii. p. 723 (breeds in Ladak).

770. ♂ ad. Kohat, 1760 ft., 31st March.
783. ♂ ad. ,, ,, 3rd April.
68. ♂ ad. ,, ,, 17th April.

Passes through Kohat in fair numbers from the second week in March till nearly the end of May, being very common in April; the return passage lasts from August and September till well into October.

No. 68. Major Magrath shot this specimen, and saw others on his way through Kohat in April 1908. In the Bannu district he has found the bird fairly common.

[836.] Motacilla feldeggi. The Black-headed Wagtail.

Marshall, J. B. N. H. S. xiv. p. 605 (Quetta: fairly common in April); Cumming, op. cit. xvi. p. 688 (common in Seistan in April); Ward, op. cit. xvii. p. 723 (migrates through Kashmir).

768. ♂ ad. Kohat, 1760 ft., 31st March.
769. Juv. ,, ,, ,,

Small numbers appear towards the end of March and early in April, in company with the last species.

[837.] Motacilla citreola. The Yellow-headed Wagtail.

Ward, J. B. N. H. S. xvii. p. 723 (common on migration: a few nest in Kashmir).

727. ♂ ad. Kohat, 1760 ft., 23rd March.

Occurs fairly commonly from February till nearly the end of May. This species and the next are more usually to be found about marshes than the preceding, and commonly roost in reed-beds, when available. None were seen in autumn.

[838.] Motacilla citreoloides. Hodgson's Yellow-headed Wagtail.

Fulton, J. B. N. H. S. xvi. p. 56 (Chitral: saw a pair at

10,000 ft. in July); Ward, op. cit. xvii. p. 723 (breeds in Kashmir).

775. ♂. Kohat, 1760 ft., 2nd April.

The same may be said of this species as of the last, but it is rather more common.

It may be of interest to add that this year (July 1908) I found this species nesting freely from 8800 to 13,000 feet in the Kaghan Valley (Hazara, N.W. Frontier), north of our limits.

Oates says of *M. citreola*, "the young probably assume the *adult plumage at the first spring moult*"; and of the present species, "the young do not appear to differ *in any respect* from those of *M. citreola*." This, however, appears not to be the case, for some individuals certainly breed in the immature plumage. A pair consisting of an adult male and an immature female had made a nest at 12,000 feet, under a stone, and this contained two young birds and one abnormally small egg measuring ·72 × ·50 inch. In several other instances, too, I observed birds in the pale immature garb with food in the bill, which, from their behaviour, had evidently broods hard by.

[840.] Anthus trivialis. The Tree-Pipit.

Marshall, J. B. N. H. S. xiv. p. 605 (common near Quetta in winter); Fulton, op. cit. xvi. p. 56 (a few resident between 5000 and 10,000 feet); Betham, t. c. p. 832 (found two nests near Quetta in June).

712. ♀ ad. Kohat, 1760 ft., 19th March.

Large numbers pass through Kohat and the Kurram Valley from mid-March till mid-May, returning in August, September, and October, but halting in comparatively few cases.

[840 a.] Anthus pratensis. The Meadow-Pipit.

708. ♀ ad. Kohat, 1760 ft., 19th March.

Major Magrath was the first to meet with this species in N.W. India, and in January and February 1908 secured four examples at Bannu. I only met with one at Kohat, but possibly it has been overlooked, owing to its resemblance to *A. trivialis*.

[844.] Anthus similis. The Brown Rock-Pipit.

Marshall, J. B. N. H. S. xiv. p. 605 (summer visitor); Ward, op. cit. xvii. p. 723 (occurs: Kashmir); Perreau, op. cit. xviii. p. 186 (specimen shot: Chitral).

566. ♂. Kohat, 1760 ft., 6th February,
569. ♂. „ „ 8th February.
736. ♂ ad. „ „ 24th March.
743. ♂ ad. „ „ 27th March.

A common resident in the District, nesting on the Samana in summer, and occurring from August till April along the foot of the hills and on stony ground generally. From January till the end of March it is also found commonly about cultivated lands. It perches readily in trees. It varies a good deal in size and colour. In February 1908 there were flocks of peculiarly dusky individuals on the grass-farm. Nos. 566 and 569 are examples of this dark-coloured Pipit.

[845.] Anthus richardi. Richard's Pipit.

61. ♀ ad. Kohat, 1760 ft., 4th January.
582. ♂ ad. „ „ 14th February.

A rare winter visitor, these being the only examples met with. Both were procured on the grass-farm.

[847.] Anthus rufulus. The Indian Pipit.

Rattray, J. B. N. H. S. xii. p. 341 (Thall: common in winter); Ward, op. cit. xvii. p. 723.

140. ♀ ad. Kohat, 1760 ft., 11th March.
145. ♀ ad. „ „ 15th March.
151. ♂ ad. „ „ 17th March.

A summer visitor, arriving early in March and breeding in numbers on the grass-farm and other suitable places. Colonel Rattray must, I think, have mistaken *A. campestris* (which I have shot at Thall) for this species.

[848.] Anthus campestris. The Tawny Pipit.

Marshall, J. B. N. H. S. xiv. p. 605 (Quetta: winter visitor).

69. ♀ ad. Kohat, 1760 ft., 7th January.
142. ♂ ad. „ „ 13th March.

485. ♀ ad. Thall, 2500 ft., 14th April.
492. ♂ ad. ,, ,, 16th April.

Fairly numerous from the middle of September till the middle of April, chiefly frequenting dry open country, and not found much about cultivated ground. Not observed on the Samana or in the Kurram Valley.

[850.] Anthus rosaceus. Hodgson's Pipit.

Ward, J. B. N. H. S. xvii. p. 723 (breeds freely in Kashmir).

298. ♂. Safed Koh, 12,000 ft., 2nd July.
486. ♂ ad. Thall, 2550 ft., 14th April.
586. Juv. Kohat, 1850 ft., 15th February.

Flocks composed chiefly of immature birds visit the District from January till mid-April, frequenting, for the most part, marshes and irrigated land. This species nests freely on the Safed Koh, from 11,000 to 13,000 feet. I found two nests in June, both under stones, perfectly concealed, and well and solidly constructed of roots and grass. In one case I surprised the bird excavating the hollow under a stone for the nest. Not noted in autumn.

[851.] Anthus spipoletta. The Water-Pipit.

Watson, J. B. N. H. S. xv. p. 145 (Chaman : common in winter) ; Ward, op. cit. xvii. p. 723 (occurs).

568. ♂ juv. Kohat, 1760 ft., 7th February.
622. ♂ ad. ,, ,, 29th February.
632. ♂ ad. ,, ,, 1st March.
636. ♂ ad. ,, ,, 2nd March.
646, 647. ♂ ♀ ad. Samana, 6500 ft., 5th March.

A winter visitor, and by far our commonest Pipit from early in October till about the 18th of March. It moults into the beautiful summer plumage before leaving. A few individuals are to be found on the dry rocky summit of the Samana all the winter. No. 568 is a dingy specimen.

Anthus coutellii. The Persian Water-Pipit.

Anthus coutellii Savigny; Hartert, Vög. pal. Faun. p. 281.

387. ♀. Samana, 6500 ft., 28th October, 1906.

Bill blackish, lower mandible yellowish; iris dark brown; tarsus dark yellowish brown.

Wing 3·4 in.; tail 2·55 in.; bill ·75 in.; hind claw ·48 in.

646, 647. ♂ ♀ ad. Samana, 6500 ft., 5th March.

No. 387 was shot out of a flock which was feeding in a very dry spot amongst stunted scrub.

Dr. Hartert says that the range of this bird has not yet been fully worked out, but that it is found in winter in Egypt and Palestine, as well as in Eastern Persia and Persian Baluchistan; also that it breeds in the highlands of Persia and possibly in Lebanon and the Caucasus.

[852.] Anthus japonicus. The Eastern Water-Pipit.

84. ♂.	Kohat,	1760 ft.,	14th January.
155. ♂.	,,	,,	22nd March.
184. ♂.	,,	,,	4th April.
581. ? sex.	,,	,,	14th February.

A somewhat scarce winter visitor, occurring singly with the flocks of *A. spipoletta* or in small parties by itself.

[853.] Oreocorys sylvanus. The Upland Pipit.

Rattray, J. B. N. H. S. xvi. p. 654 (common in the Murree Hills); Ward, op. cit. xvii. p. 723.

398. ♂ ad. Samana, 4500 ft., 14th November.

A resident on the Samana from 4000 feet upwards, but not common. Capt. Keen found several nests in July.

[859.] Melanocorypha bimaculata. The Eastern Calandra Lark.

Fulton, J. B. N. H. S. xvi. p. 56 (plentiful in Chitral at the end of February and beginning of March); Ward, op. cit. xvii. p. 724 (one shot in December).

Large flocks visit Kohat in February and early in March.

[860.] Alauda arvensis. The Sky-Lark.

Marshall, J. B. N. H. S. xiv. p. 605 (common round Quetta in winter, a few stay for the summer); Fulton, op. cit. xvi. p. 56 (a resident between 5000 and 11,000 feet); Ward, op. cit. xvii. p. 724 (a resident).

577. ♂ ad. Jamrud, 2000 ft., 11th February.

615. ♀ ad. Lachi, 1540 ft., 26th February.
704. ♀ ad. Kohat, 1760 ft., 18th March.
737. ♀ ad. „ „ 25th March.

A winter visitor, abundant from November till March. By the end of the latter month it is entirely replaced by the next species, which arrives in the second week in March.

[861.] ALAUDA GULGULA. The Indian Sky-Lark.

Ward, J. B. N. H. S. xvii. p. 724 (reported from the Jammu plains).

695. ♂. Lachi, 1540 ft., 17th March.
728. ♂. Kohat, 1760 ft., 23rd March.
752. ♂. „ „ 27th March.

A summer visitor, nesting freely on the grass-farm. It can be distinguished from *A. arvensis* by the harsh note uttered on rising and by the song, which is not so rich as that of the latter.

862. CALANDRELLA BRACHYDACTYLA. The Short-toed Lark.

Marshall, J. B. N. H. S. xiv. p. 605 (abundant from winter till May 1st); Fulton, op. cit. xvi. p. 56 (Chitral: many pass through in October).

613. ♀. Lachi, 1540 ft., 26th February.
621. ♂. Kohat, 1760 ft., 29th February.
730, 731. ♀ ♂. Kohat, 1760 ft., 23rd March.

Occurs commonly in Kohat and the Kurram Valley from the last week in February till the middle of April (last seen on the 19th), and returns in small numbers in September.

[864.] *Calandrella tibetana.*—Major Magrath shot an example of this species at Bannu in December 1907. It has now been found to occur in Kohat; fairly common in spring.

[869.] MIRAFRA CANTILLANS. The Singing Bush-Lark.

266. ♂ ad. Kohat, 1760 ft., 19th May.

Fairly numerous from the middle of May till September about grassy and bush-covered plains. Not observed in the Kurram Valley, though fairly common at Thall at the entrance. A most energetic songster; many of its notes seem to be borrowed from *Argya caudata*.

[874.] GALERITA CRISTATA. The Crested Lark.

Rattray, J. B. N. H. S. xii. p. 341 (very common at Thall); Marshall, op. cit. xiv. p. 605 (Quetta: a very common resident); Cumming, op. cit. xvi. p. 689 (Seistan: abundant); Perreau, op. cit. xviii. p. 186 (Chitral).

610. ♀.	Lachi, 1540 ft.,		26th February.
687. ♀.	Kohat, 1760 ft.,		16th March.
723. ♀.	„	„	21st March.
754. ♂.	„	„	27th March.

This species is abundant everywhere and resident up to 3000 feet. In the Kurram Valley it occurs up to 7000 feet in summer. It is a great mimic, as Major Magrath has noted, its rendering of the notes of *Sarcogrammus indicus* and *Totanus calidris* being particularly good.

[878.] AMMOMANES PHŒNICUROÏDES. The Desert Finch-Lark.

Rattray, J. B. N. H. S. xii. p. 341 (Thall: rather rare); Marshall, op. cit. xiv. p. 605 (Quetta: common in the low hills); Cumming, op. cit. xvi. p. 689 (fairly common in Seistan); Ward, op. cit. xvii. p. 724 (Kashmir).

609. ♂. Lachi, 1540 ft., 25th February.
761. ♀. Kohat, 1850 ft., 30th March.

Resident and abundant on stony wastes and hill-sides up to 3000 feet.

The song reminds me somewhat of that of *Anthus similis*, being often uttered on the wing.

[879.] PYRRHULAUDA GRISEA. The Ashy-crowned Finch-Lark.

196. ♀ ad. Kohat, 1760 ft., 8th April.

The above example was one of the only pair met with. The male, a fine black-breasted bird, I failed to secure.

[895.] ARACHNECHTHRA ASIATICA. The Purple Sun-bird.

Rattray, J. B. N. H. S. xii. p. 341 (Thall: common in summer).

A common summer visitor, arriving in the middle of March and disappearing towards the middle of September. It occurs up to 5000 feet on the Samana.

[946.] GECINUS SQUAMATUS. The Western Himalayan Scaly-bellied Green Woodpecker.

Fulton, J. B. N. H. S. xvi. p. 57 (common in Chitral from 4000 to 8000 ft.); Rattray, t. c. p. 659 (common in the Murree Hills); Ward, op. cit. xvii. p. 724 (widely distributed in Kashmir).

565. ♀ ad. Kohat, 1760 ft., 6th February.
659. ♀ ad. Hangu, 2500 ft., 8th March.
713. ♂ ad. Kohat, 1850 ft., 20th March.

A cold-weather visitor to the District from August to the end of March; fairly common in the Miranzai Valley, but scarce near Kohat. A resident on the Samana. Occurs sparingly in the Kurram Valley up to 9000 feet. I have several times seen this Woodpecker climbing up a cliff as if it were a tree.

[961.] DENDROCOPUS HIMALAYENSIS. The Western Himalayan Pied Woodpecker.

Fulton, J. B. N. H. S. xvi. p. 57 (Chitral: common from 5000 to 11,000 ft.); Rattray, t. c. p. 660 (Murree Hills: abundant); Ward, op. cit. xvii. p. 724 (common).

Common on the Samana from 4500 feet upwards, and on the Safed Koh up to tree-limit.

[963.] DENDROCOPUS SINDIANUS. The Sind Pied Woodpecker.

Rattray, J. B. N. H. S. xii. p. 341 (Thall: not rare); Marshall, op. cit. xv. p. 351 (Quetta: common near Khojak).

655, 656. ♂ ♀ ad. Hangu, 2500 ft., 8th March.

A fairly common resident throughout the District up to 3000 feet. Nesting commences early in April, a mulberry-tree being usually selected for the excavation. I have often observed this species in scrub-jungle some distance from trees.

In this and the last species the colouring of the lower parts varies from white to a rich reddish buff, the white parts of the upper surface being also frequently tinged with fulvous. No. 656 represents this ruddy variety.

[969.] DENDROCOPUS AURICEPS. The Brown-fronted Pied Woodpecker.

Fulton, J. B. N. H. S. xvi. p. 57 (fairly common in Chitral from 4000 to 10,000 ft.); Rattray, t. c. p. 660 (breeds in the Murree Hills up to 7500 ft.); Ward, op. cit. xvii. p. 725 (rare in Kashmir).

580. ♀. Kohat, 1760 ft., 13th February.
654. ♀. Hangu, 2500 ft., 8th March.
716. ♂ ad. Kohat, 1760 ft., 20th March.

A common winter visitor to the District, including the Samana, from October till April (last seen on the 9th).

[972. LIOPICUS MAHRATTENSIS (Lath.) is fairly common both at Rawal Pindi and Peshawar (an example from the latter place is in the British Museum), but has not been observed in Kohat as yet.]

[1003.] IYNX TORQUILLA. The Wryneck.

Marshall, J. B. N. H. S. xv. p. 351 (Quetta: occurs regularly in April); Fulton, op. cit. xvi. p. 57 (Chitral: one obtained in May); Ward, op. cit. xvii. p. 725 (nests fairly commonly in Kashmir).

80. ♂ ad. Kohat, 1760 ft., 11th January.
69. ♀ ad. ,, ,, 18th April.

Not common. The only other examples seen were observed on the 23rd of April near Peiwar, 7000 feet (Kurram Valley), with the exception of one on the 29th near Kohat.

[986. BRACHYPTERNUS AURANTIUS (Linn.).—Major Magrath observed one individual at Bannu in October 1908. It is common at Lahore.]

[1022.] CORACIAS INDICA. The Indian Roller.

Ward, J. B. N. H. S. xvii. p. 724 (rare; occurs in the outer ranges).

Resident, but partially migratory, being very common in summer and comparatively scarce in winter.

[1024.] CORACIAS GARRULA. The European Roller.

Rattray, J. B. N. H. S. xii. p. 341 (Thall: common in summer); Marshall, op. cit. xv. p. 351 (Quetta: common in

May and early June); Fulton, op. cit. xvi. p. 57 (passing through Chitral early in May); Cumming, t. c. p. 689 (passing through Seistan in April); Ward, op. cit. xvii. p. 725 (summer visitor from May till November).

A fairly common summer visitor to the District and the Kurram Valley, up to 3000 feet, from early in May till September, being particularly common round Thall, where it nests in colonies in the conglomerate cliffs.

[1026.] MEROPS VIRIDIS. The Common Indian Bee-eater.

Rattray, J. B. N. H. S. xii. p. 342 (not common at Thall); Ward, op. cit. xvii. p. 725.

756. ♂ ad. Kohat, 1760 ft., 28th March.

Abundant in summer, the majority arriving about the 20th of March and leaving in the middle of October. In a mild year odd birds and even parties of five or six are seen at intervals throughout the winter.

[1027.] MEROPS PHILIPPINUS. The Blue-tailed Bee-eater.

Rattray, J. B. N. H. S. xii. p. 342 (Thall: June).

We have not met with this Bee-eater in Kohat. Colonel Rattray, however, observed a pair at Thall in June.

Major Magrath has found it not uncommon in Bannu in early autumn and has procured an example. It is also very common round Rawal Pindi.

[1028.] MEROPS PERSICUS. The Blue-cheeked Bee-eater.

Major Magrath saw what he took to be this species in large numbers between Basal and the Indus, just outside our limits, in July 1907, and also observed an individual at Khushalgarh just inside. Another which he obtained in Bannu, where the bird is fairly common in summer, is now in the National Collection.

[1029.] MEROPS APIASTER. The European Bee-eater.

Marshall, J. B. N. H. S. xv. p. 351 (Quetta: common summer visitor); Fulton, op. cit. xvi. p. 57 (a few breed in Chitral); Betham, t. c. p. 749 (nests freely round Quetta); Ward, op. cit. xvii. p. 725 (abundant in summer).

Passes through Kohat in April and the beginning of May, returning in August and September. Possibly a few pairs nest round Thall; several were certainly there up to the time that I left (May 20th), and Capt. Keen informs me that he saw some there in July. This species breeds freely in the Kurram Valley from 3000 to 7000 feet. Towards the end of July, when nesting-operations were over, flocks of from ten to forty used to fly up the valleys of the Safed Koh to tree-limit (12,000 feet) every morning, and return at dusk.

[1033.] CERYLE VARIA. The Indian Pied Kingfisher.

Rattray, J. B. N. H. S. xii. p. 342 (common at Thall: nests in March); Ward, op. cit. xvii. p. 725 (very common up to 6000 ft.).

A resident, but not very common, though found along most of the streams of the District, and in the Kurram Valley at least up to Dandar (4700 feet).

[1035.] ALCEDO ISPIDA. The Common Kingfisher.

Rattray, J. B. N. H. S. xii. p. 342 (Thall: an uncommon resident); Marshall, op. cit. xv. p. 351 (Quetta: common in spring); Cumming, op. cit. xvi. p. 689 (a common resident in Seistan); Ward, op. cit. xvii. p. 725 (abundant in Kashmir up to 6000 ft.).

The Kingfisher is common in cold weather, even about cantonments, and, never being molested, shews little fear of man.

It nests fairly commonly in the Miranzai and Kurram Valleys, but only a few pairs stay to breed in the plains around Kohat. It may often be seen hovering over water after the manner of *Ceryle varia*, if no perch is available.

[1044.] HALCYON SMYRNENSIS. The White-breasted Kingfisher.

Rattray, J. B. N. H. S. xii. p. 342 (Thall: common); Ward, op. cit. xvii. p. 725 (occurs in Poonch).

Abundant in Kohat and up to Sadda (3500 feet) in the Kurram Valley. A permanent resident. This bird picks up lizards and insects from the ground like a Shrike. In Kohat its favourite food consists of freshwater crabs. Major Magrath has also observed it taking locusts and dragon-flies on the wing.

[1066.] Upupa epops. The European Hoopoe.

Marshall, J. B. N. H. S. xv. p. 351 (Quetta: summer visitor); Fulton, op. cit. xvi. p. 58 (Chitral: summer visitor, occurring up to 14,000 ft.); Cumming, t. c. p. 690; Ward, op. cit. xvii. p. 726 (common in summer, rare in winter).

Abundant in Kohat in the cold weather, but only a few individuals stay to nest. Occurs in the Kurram Valley up to 8000 ft., but is scarce.

[1068.] Cypselus melba. The Alpine Swift.

Rattray, J. B. N. H. S. xii. p. 342 (Thall: May); Marshall, op. cit. xv. p. 351 (Quetta: summer visitor); Fulton, op. cit. xvi. p. 58 (common in Chitral in summer from 5000 to 16,000 ft.); Rattray, t. c. p. 660 (found two nests: Murree Hills); Ward, op. cit. xvii. p. 726.

Flocks of this fine Swift, often accompanied by the next species, pass through Kohat at intervals from March till the end of May, returning in August and September. They merely pass over and do not stay.

[1069.] Cypselus apus. The Common Swift.

Rattray, J. B. N. H. S. xii. p. 342 (Thall: common in May; shot two); Marshall, op. cit. xv. p. 351 (Quetta: common in summer; found nests in caves); Fulton, op. cit. xvi. p. 58 (Chitral: common in summer up to 14,000 ft.); Ward, op. cit. xvii. p. 726 (summer visitor; nests in cliffs).

Occurs like the last species and often in company with it. Breeds in small numbers in the cliffs of the Safed Koh, and is found up to the summit.

[1073.] Cypselus affinis. The Common Indian Swift.

Rattray, J. B. N. H. S. xii. p. 342 (rare at Thall); Marshall, op. cit. xv. p. 351 (common in summer); Ward, op. cit. xvii. p. 726.

Abundant in the District from early in March till

November, and appearing at intervals throughout the cold weather if the season is mild.

[1089.] CAPRIMULGUS MAHRATTENSIS. Sykes's Nightjar.

Rattray, J. B. N. H. S. xii. p. 342 (Thall); Cumming, op. cit. xvi. p. 690 (abundant in Seistan from April till September).

Nightjars are not common in the neighbourhood of Kohat, but round Thall the country is better suited to their habits and they are plentiful. We did not meet with this species, and are indebted to Col. Rattray for the following notes he made at Thall:—"Fairly numerous. The birds are not permanent residents, but arrive about the middle of May with *C. europæus*. I always found this species on the open hill-sides, and not amongst jungle. It breeds in the more open nullahs during June and July. I obtained four nests with eggs, the female in each case being shot on leaving the eggs. . . ."

Major Magrath procured an example at Bannu in September 1907.

[1090.] CAPRIMULGUS MONTICOLA. Franklin's Nightjar.

Rattray, J. B. N. H. S. xii. p. 343 (Thall).

The following details are again taken from notes made by Colonel Rattray at Thall:—"Common and a permanent resident. I found it breeding plentifully; all the eggs that I procured from five nests were laid without any depression, and were extremely highly coloured, being almost brick-red."

[1092.] CAPRIMULGUS EUROPÆUS. The Common Nightjar.

Rattray, J. B. N. H. S. xii. p. 343 (Thall: commonest Nightjar in summer; found ten nests); Marshall, op. cit. xv. p. 351 (fairly common at Quetta in summer); Rattray, op. cit. xvi. p. 661 (not common in the Murree Hills).

Passes through Kohat in spring and autumn, and nests commonly in the scrub-jungle around Thall. I shot several examples.

[1104.] CUCULUS CANORUS. The Common Cuckoo.

Marshall, J. B. N. H. S. xv. p. 351 (Quetta: very common in March and April); Fulton, op. cit. xvi. p. 58 (Chitral: fairly common in summer); Rattray, t. c. p. 661 (abundant in the Murree Hills); Ward, op. cit. xvii. p. 726; Magrath, op. cit. xviii. p. 296 (abundant at Thandiani, 9000 ft., Hazara District).

The familiar call of the Cuckoo is heard in Kohat from early in April till nearly the middle of May. The bird is found up to the tree-limit on the Safed Koh, but is rather scarce. It continues calling there till well past the middle of July.

Major Magrath (*l. c.*) records his finding Blue Cuckoo's eggs.

[1118.] COCCYSTES JACOBINUS. The Pied Crested Cuckoo.

Ward, J. B. N. H. S. xvii. p. 726 (Kashmir: not common, but several specimens were procured in the Valley).

Occurs rarely during the autumn migration. I have met with it on three occasions, viz. in August and September.

[1120.] EUDYNAMIS HONORATA. The Indian Koel.

Ward, J. B. N. H. S. xvii. p. 726.

I cannot do better than quote the following notes made by Major Magrath:—"A summer visitor in small numbers, much to the annoyance of *Corvus splendens*. In the early summer of 1905 there were probably not more than half a dozen birds in the station, but they made enough noise for a hundred. I picked up a dead fledgling in the month of August."

Arrives in Kohat about the middle of May.

[1138.] PALÆORNIS TORQUATUS. The Rose-winged Parroquet.

Ward, J. B. N. H. S. xvii. p. 727.

The following details are also from Major Magrath's notes:—"A resident, though scarce. There are probably not more than eight or a dozen in the District, all of which frequent cantonments. I know of only two trees where they nest, one a large cotton-tree (Simal) and the other a *Cirrus*. A tame example which I kept in a state of semi-freedom used often to mix with the wild birds, but the females, to whom he made advances, he invariably found, to his cost, appropriated."

[1141.] Palæornis schisticeps. The Slaty-headed Parroquet.

Fulton, J. B. N. H. S. xvi. p. 58 (Chitral: summer visitor, occurring up to 7000 ft.); Rattray, t. c. p. 661 (very common in the Murree Hills); Ward, op. cit. xvii. p. 727 (common in summer and autumn up to 7500 ft.).

Flocks of this Parroquet visit the District during April (noted on various dates from the 8th to the 26th) and stay a few days. I came across a small nesting-colony on the 19th of June near Zeran, 5800 feet (Kurram Valley); the young birds had just flown.

[1157.] Asio accipitrinus. The Short-eared Owl.

Ward, J. B. N. H. S. xvii. p. 727 (occurs in the plains).

456. ♂ ad. Samana, 6500 ft., 5th March.

Migrates through Kohat in March, but apparently only in small numbers.

[1159.] Syrnium biddulphi. Scully's Wood-Owl.

Fulton, J. B. N. H. S. xvi. p. 58 (Chitral: not common, occurs up to 8000 ft.); Ward, op. cit. xvii. p. 727 (fairly common in Kashmir: eggs taken in April and May).

90. ♂. Kohat, 1760 ft., 19th January.

637. ♂. Hangu, 2700 ft., 3rd March.

Fairly common from November till April in the orchards and wild olive-groves of the Kohat and Miranzai Valleys.

This species spends the day in evergreen trees, but without troubling much about concealment, being often mobbed by Crows, Mynas, Bulbuls, &c. An individual so mobbed was rescued and taken to Major Magrath, who kept it till dusk and then let it go. He says that it allowed him to handle it and scratch its head, and appeared to be of a gentle disposition. He adds that the bird is a not uncommon winter visitor to Bannu.

[1164.] Ketupa zeylonensis. The Brown Fish-Owl.

668. ♂ ad. Kachai, 2700 ft., 11th March.

Probably not rare, as the streams of the District are full of small fishes and crabs. The stomach of the above-mentioned example was crammed with fragments of crabs' shells and claws, with a few fish-bones.

Besides this example I shot one of a pair at Kohat in November.

[1168.] BUBO BENGALENSIS. The Rock Horned Owl.

Rattray, J. B. N. H. S. xii. p. 343 (rare: Thall); Cumming, op. cit. xvi. p. 690 (Seistan: one young bird brought in); Ward, op. cit. xvii. p. 727 (common in Kashmir).

Major Magrath writes as follows on this species:—"A resident and fairly common. An example I shot on the 13th of January, 1906, was put up in broad daylight from a nullah in which it had just pounced on a huge bull-frog. It flew away with its prey some distance and was killed on the ground. The vast flocks of *Pastor roseus* that roosted in the cantonments in August 1905 were much harried by Owls, this species being, as far as I could ascertain, the chief depredator."

This is the common Owl of the District.

[1180.] ATHENE BRAMA. The Spotted Owlet.

Ward, J. B. N. H. S. xvii. p. 727 (Kashmir).

441. ♂. Kohat, 1760 ft., 19th February.

549. ♂. Thall, 2550 ft., 15th May.

A fairly common resident, not found about houses, as is usually the case, but only in cliffs in wild and desolate parts of the District, or occasionally in groves. In the cliffs near Thall it is particularly common, and this must, I think, be the species which Colonel Rattray took for *A. bactriana*. Curiously enough, in the adjoining District of Peshawar it occurs commonly about towns and villages.

[1191.] OTOGYPS CALVUS. The Black Vulture.

Ward, J. B. N. H. S. xvii. p. 728 (far from common in Kashmir).

Rare. I met with a pair near Siau in November 1905, and a solitary individual on the grass-farm in February 1908. These are the only examples that I have observed.

[1192.] GYPS FULVUS. The Griffon Vulture.

Rattray, J. B. N. H. S. xii. p. 343 (Thall: common); Marshall, op. cit. xv. p. 351 (Quetta: very common); Ward, op. cit. xvii. p. 728 (breeds in colonies and is resident).

Common throughout the District, especially on the Samana, where it breeds and is resident. Observed in the Kurram Valley up to 8500 feet.

[1196.] PSEUDOGYPS BENGALENSIS. The Indian White-backed Vulture.

Rattray, J. B. N. H. S. xii. p. 343; Ward, op. cit. xvii. p. 728 (rare in Kashmir).

Colonel Rattray recorded this species from Thall, and made the following notes on it:—"Common on the plains round Thall; they were feeding on the dead transport animals all along the road from Kohat to Thall." This was during the Tirah Campaign of 1897–98, which doubtless attracted them to our part of the country, where in times of peace they are unknown. The nearest place where I have seen them is at Rawal Pindi, a hundred miles east of our limits, where, in October 1905, on the occasion of thirteen mules being shot, a great number, in company with *Gyps fulvus* and *Neophron percnopterus*, assembled in anticipation of the feast.

[1197.] NEOPHRON PERCNOPTERUS. The Egyptian Vulture.

Rattray, J. B. N. H. S. xii. p. 343 (Thall); Marshall, op. cit. xv. p. 351 (Quetta: common in summer); Fulton, op. cit. xvi. p. 59 (Chitral: summer visitor from March till September); Rattray, t. c. p. 662 (common in the Murree Hills); Cumming, t. c. p. 691 (occasionally seen in Seistan); Ward, op. cit. xvii. p. 728.

The common Scavenger Vulture of the District. A resident everywhere, except on the Samana and in the Kurram Valley, which it leaves on the approach of winter, returning early in March with *Passer domesticus*. Scarce in the Kurram Valley, though we noted it up to the head (7000 feet).

[1199.] GYPAËTUS BARBATUS. The Lammergeier.

Rattray, J. B. N. H. S. xii. p. 343 (common at Thall); Marshall, op. cit. xv. p. 352 (Quetta: very common and nests); Fulton, op. cit. xvi. p. 59 (Chitral: a common resident); Ward, op. cit. xvii. p. 928 (common; nests in February and March).

Common and found everywhere from the plains to the summit of the Safed Koh, though seldom seen in the plains from June till October.

[1201.] AQUILA HELIACA. The Imperial Eagle.

Ward, J. B. N. H. S. xvii. p. 728 (an uncommon winter visitor).

A fairly common winter visitor. Mr. Donald has seen one give chase to a Laggar Falcon, and finally force it to drop its prey. Immature birds of this genus are frequently seen about the grass-farm feeding on offal, mole-rats, &c.

[1202.] AQUILA BIFASCIATA. The Steppe-Eagle.

Ward, J. B. N. H. S. xvii. p. 336 (abundant in Kashmir).

772. ♂ imm. Kohat, 1900 ft., 1st April.

Fairly common in winter, but those seen were mostly immature birds.

[1203.] AQUILA VINDHIANA. The Tawny Eagle.

Rattray, J. B. N. H. S. xii. p. 343; Ward, op. cit. xvii. p. 728.

Fairly plentiful in the cold weather and probably resident. Mr. Donald told me that in May 1907, when swarms of young locusts were devastating Kohat, he counted in one spot alone thirty-five of these Eagles which had apparently been gorging on the locusts. Colonel Rattray writes that in the Tirah Campaign he often saw this species feeding in company with Vultures on dead transport animals near Thall.

[1205.] AQUILA MACULATA. The Large Spotted Eagle.

Ward, J. B. N. H. S. xviii. p. 464 (Badarwa, Kashmir).

One pair observed on the grass-farm and another at the

Lachi reed-bed in April and May. Probably breeds in the neighbourhood.

[1207.] HIERAËTUS FASCIATUS. Bonelli's Eagle.

Marshall, J. B. N. H. S. xv. p. 352 (Quetta : some breed in the hills) ; Ward, op. cit. xvii. p. 728 (not common in Kashmir).

A fairly common resident, very destructive to game. Mr. Donald, who has trained several of these birds, says that they are most courageous and will hawk anything they are entered to ; but that they are wild and difficult to train, even when taken very early from the nest, and that through want of practice in flying they are usually rather unwieldly ; added to which, owing to their marked partiality for poultry, they are somewhat unsatisfactory from a falconer's point of view. In the wild state they have a bad reputation for pursuing and killing trained Goshawks when they get the chance, and are said to be the worst enemies of the wild Goshawk. They hunt in pairs ; their favourite quarry, if they can be said to have one, is perhaps the Wood-Pigeon, but little comes amiss, and they will snatch up a fowl when opportunity offers, or make off with a wounded duck.

[1216.] CIRCAËTUS GALLICUS. The Short-toed Eagle.

Ward, J. B. N. H. S. xvii. p. 728.

Fairly common in winter, and perhaps resident.

[1220.] BUTASTUR TEESA. The White-eyed Buzzard-Eagle.

711. ♂ ad. Kohat, 1760 ft., 19th March.

A summer visitor, arriving early in March and leaving towards the end of October. Breeds fairly commonly in the Miranzai and Samilzai Valleys.

[1223.] HALIAËTUS LEUCORYPHUS. Pallas's Fishing-Eagle.

Cumming, J. B. N. H. S. xvi. p. 691 (Seistan) ; Ward, op. cit. xvii. p. 728 (Kashmir).

Resident and common along the River Indus. Mr. Donald found four pairs nesting there in March. Rare elsewhere ; occasionally seen between Chikarkot and Hangu.

[1229.] Milvus govinda. The Common Pariah Kite.

Rattray, J. B. N. H. S. xii. p. 344 (Thall: very common); Marshall, op. cit. xv. p. 352 (Quetta: common, scarce in winter); Rattray, op. cit. xvi. p. 642 (common in the Galis); Ward, op. cit. xvii. p. 729.

532. ♀ ad. Peiwar Kotal, 8000 ft., 25th April.

A very common resident up to 4000 ft., occurring up to 8000 ft. in summer. Major Magrath writes: "The numbers of this species were considerably reduced in the winter of 1905 by the excessive cold. The unfortunate birds were induced to breed early in January by the mildness of the weather, and had actually commenced to nest when the intense cold, lasting well into March, fell on us."

[1230.] Milvus melanotis. The Large Indian Kite.

Rattray, J. B. N. H. S. xii. p. 344 (Thall: rare; shot a female off a nest); Fulton, op. cit. xvi. p. 59 (Chitral: April); Rattray, t. c. p. 663 (rare at Murree); Ward, op. cit. xvii. p. 729 (common in Kashmir).

Not common, more numerous on the Samana and in the Kurram Valley than elsewhere.

[1232.] Elanus cæruleus. The Black-winged Kite.

Fulton, J. B. N. H. S. xvi. p. 59 (common in Chitral in summer).

Fairly common in Kohat from early in April till October. In a mild year a few stragglers stay for the winter. I met with it as high as Dandar (4760 ft.) in the Kurram Valley.

[1223.] Circus macrurus. The Pale Harrier.

Marshall, J. B. N. H. S. xv. p. 352 (Quetta: common in spring); Fulton, op. cit. xvi. p. 59 (Chitral: April).

739. ♂ ad. Kohat, 1760 ft., 25th March.

This is the common Harrier of the District. Chiefly seen on migration from September till the end of November, and from February till May, only a few remaining for the winter.

[1234.] Circus cineraceus. Montagu's Harrier.

Ward, J. B. N. H. S. xvii. p. 729 (winter visitor to Kashmir).

Rare. We both observed this species on the Samana during the spring migration. I also saw one near Lachi in March.

[1235.] Circus cyaneus. The Hen-Harrier.

Marshall, J. B. N. H. S. xv. p. 352 (occurs at Quetta in spring); Ward, op. cit. xvii. p. 729 (common in winter).

Fairly common on passage in spring and autumn.

[1237.] Circus æruginosus. The Marsh-Harrier.

Marshall, J. B. N. H. S. xv. p. 352 (fairly common in winter); Ward, op. cit. xvii. p. 729 (very plentiful; possibly breeds in Kashmir).

Common about reed-beds and irrigated crops from September till the middle of May, especially in spring and autumn. Dresser, in his 'Manual of Palæarctic Birds' (p. 504), writing of this species, says: "It is doubtful if it dares even to attack a rat." I once disturbed a bird feasting on a freshly-killed adult *Nesokia hardwickii* (a particularly fierce species of field-rat), which I think must have been killed by the bird. I believe that a pair nested on the grass-farm at Kohat in the summer of 1906. They were there up to the 14th of June, when I left for the Kurram Valley. On my return in August I found an immature bird in the same spot.

[1239.] Buteo ferox. The Long-legged Buzzard.

Marshall, J. B. N. H. S. xv. p. 352 (common round Quetta in winter, chiefly the dark form; probably breeds close by).

A winter visitor and very common from October till April. I have shot both the light and the dark forms, but the former is much the commoner.

[1241.] Buteo desertorum. The Common Buzzard.

Cumming, J. B. N. H. S. xvi. p. 691 (Seistan: one shot in February).

757. ♀. Kohat, 1760 ft., 28th March.

A winter visitor, but by no means as common as the last species.

[1243.] Astur palumbarius. The Goshawk.

Ward, J. B. N. H. S. xvii. p. 729 (rare).

This species occurs on passage, but very rarely.

Mr. Donald says that nets are set in four or five gorges in the independent territory north of Kohat. These nets average twelve feet in height, have a two-inch mesh, and are made to fit roughly the bottom of the gorge, while they are so arranged as to collapse when struck by anything. The Goshawk is thus occasionally taken in spring and autumn. Bonelli's Eagle is its chief enemy and pursues both wild and trained birds for its prey. This is the favourite Hawk with the local Khans, but it is an expensive luxury, females costing from Rs. 150 to Rs. 200 (£10–£13), and males from Rs. 50 to Rs. 70.

[1244.] Astur badius. The Shikra.

Ward, J. B. N. H. S. xvii. p. 729 (Kashmir: rare).

A summer visitor, arriving towards the end of March. Nests commonly in the Samilzai Valley. Large numbers are snared by means of a light cage formed of fine netting stretched over supports, and covered with nooses; a live Quail is used as a bait. They are used for hawking Quail, and their price varies from 2*d.* to 1*s.*

[1247.] Accipiter nisus. The Sparrow-Hawk.

Rattray, J. B. N. H. S. xii. p. 344 (Thall: occasionally seen; breeds in the Safed Koh); Marshall, op. cit. xv. p. 352 (not common; occurs in spring at Quetta); Fulton, op. cit. xvi. p. 59 (Chitral: shot one in May at 8000 ft.); Ward, op. cit. xvii. p. 729 (a resident in Kashmir).

Occurs on migration in spring and autumn. Colonel Rattray mentions a young bird in down being brought to Parachinar in July from the Safed Koh. Mr. Donald tells me that this species breeds freely in Tirah, which lies just north of our limits, and that every autumn some thirty or forty individuals are snared along the Kachai stream, by means of a drop-net set up in the open, with a fine network cage containing Sparrows suspended in front. The Hawk seeing the Sparrows flutter up makes a dash and gets entangled in the net. The bazaar rate varies from 2*d.* to 10*s.*

[1254.] Falco peregrinus. The Peregrine Falcon.

Ward, J. B. N. H. S. xvii. p. 729 (common in Kashmir).

This species occurs chiefly on migration in spring and autumn, but is by no means common. Mr. Donald only knows of one instance of its being snared in the District, but has often observed it on passage. The bazaar rate for a good female is about Rs. 30.

[1255.] Falco peregrinator. The Shahin.

Rattray, J. B. N. H. S. xii. p. 344 (Thall: common along the foot of the hills); Ward, op. cit. xvii. p. 729 (occasionally caught near Srinagar).

A resident, and after the Laggar the commonest of our larger Falcons. Mr. Donald generally keeps a pair for hawking Chukor, Partridges, Teal, &c. He speaks highly of their courage, and has known one strike and kill a Mallard, but says that, though comparatively easy to train, after a year or two in captivity they deteriorate rapidly. There are many eyries scattered through the District. In June and July Mr. Donald has often seen them taking Bats; these he thinks must be young birds practising.

[1257.] Falco jugger. The Laggar Falcon.

Marshall, J. B. N. H. S. xv. p. 352 (Quetta: fairly common); Ward, op. cit. xvii. p. 729.

Resident and common in open, cultivated country. Mr. Donald says that this species is the most frequent lure for taking other and more valuable Falcons. It is usually trained to take hares, but is not thought very much of, being too slow. The bazaar price is R. 1.

[1258.] Falco cherrug. The Cherrug or Saker.

The Cherrug occurs in open country like the last species, but is not nearly so common, and is a winter visitor only, arriving about October and leaving in April. Mr. Donald kept two birds which he trained very successfully to take *Milvus govinda* as well as Houbaras, Bustards, and Hares.

After the Goshawk and Peregrine, this is the favourite amongst local falconers. The price ranges from Rs. 7 to Rs. 14 for a good female.

[1260.] Falco subbuteo. The Hobby.

Fulton, J. B. N. H. S. xvi. p. 60 (Chitral: one specimen obtained in May); Rattray, t. c. p. 663 (rare in the Murree Hills; breeds); Ward, op. cit. xvii. p. 729 (breeds in the higher hills of Kashmir).

Mr. Donald states that this species is fairly common in spring and that he has observed it as late as May. I came across three individuals in beautiful adult plumage in February near Lachi; they were flying backwards and forwards, sparring at each other, and occasionally perching in a tree close by, while constantly uttering a cry which sounded like "gyák-gyák."

[1263.] Æsalon regulus. The Merlin.

Ward, J. B. N. H. S. xvii. p. 729 (widely distributed in winter).

This bird is fairly common from October till the middle of March; it is more often seen about the grass-farm and the Yarma and Lachi plains than elsewhere. It migrates over the Samana in March. It is seldom trained in this district.

[1264.] Æsalon chicquera. The Red-headed Merlin or Turumti.

An occasional visitor, but by no means common. I have only twice seen the Turumti; on one occasion the bird shot down just in front of me to take a Starling flying in to roost, and started to tear it up close by, giving me a splendid view through my glasses. Mr. Donald says that he has met with this species in Kohat in most months of the year. He has a great opinion of its courage, and has trained it to take Rollers (a bird a great deal bigger than itself), while he has known a pair to tackle a Blue Rock-Pigeon. It is a fairly common resident, he says, in the adjoining Districts of Peshawar and Mianwali. Major Magrath has also found it not uncommon in Bannu. The wide open plains of these Districts are more to its liking than the confined valleys of Kohat.

[1265.] TINNUNCULUS ALAUDARIUS. The Kestrel.

Rattray, J. B. N. H. S. xii. p. 344 (a common resident at Thall); Marshall, op. cit. xv. p. 352 (Quetta: common; found many nests); Fulton, op. cit. xvi. p. 60 (Chitral: a very common resident from 4000 ft. upwards; one seen at 18,000 ft.); Rattray, t. c. p. 663 (common in the Murree Hills); Ward, op. cit. xvii. p. 729.

753. ♂. Kohat, 1760 ft., 27th March.
764. ♂. „ „ 23rd March.

Common in winter; a resident on the Samana and in the Kurram and Miranzai Valleys (nesting regularly at Thall, 2550 ft., and Hangu, 2700 ft.).

[1292.] COLUMBA INTERMEDIA. The Indian Blue Rock-Pigeon.

Rattray, J. B. N. H. S. xii. p. 344 (Thall: common in winter); Marshall, op. cit. xv. p. 352 (a resident at Quetta); Fulton, op. cit. xvi. p. 60 (Chitral: resident, occurring up to 10,000 ft.); Cumming, t. c. p. 691 (occurs in Seistan); Ward, op. cit. xvii. p. 943 (Kashmir).

Occurs in large flocks in the District from August to April. A few appear to be resident round Thall, but the great majority leave in April. Colonel Rattray, in his article referred to above, says that "they were breeding in hundreds in a cliff near the Fort. About the middle of April they all disappeared suddenly." On the 19th of May, 1907, however, I found some still about the cliffs at Thall.

[1293.] COLUMBA LIVIA. The Blue Rock-Pigeon.

Rattray, J. B. N. H. S. xii. p. 344 (Thall: large flocks occur in winter); Marshall, op. cit. xv. p. 352 (Quetta); Ward, op. cit. xvii. p. 943 (the common Pigeon of Kashmir).

Occurs with flocks of the last species in winter, but is much less common. Never observed in separate flocks.

[1295.] COLUMBA EVERSMANNI. The Eastern Stock-Dove.

Cumming, J. B. N. H. S. xvi. p. 691 (Seistan: April); Ward, op. cit. xvii. p. 943 (Kashmir: rare, occurs on migration).

Migrates through Kohat in the latter half of April in small flocks, which feed chiefly on the mulberries that are then ripening. Less wary than other members of the genus. Appears to be scarce in the Kurram Valley, and probably only passes through. I shot an example at 6500 feet in Ilex-scrub on the 2nd of May.

[1298.] PALUMBUS CASIOTIS. The Eastern Wood-Pigeon.

Marshall, J. B. N. H. S. xv. p. 352 (common on the hills round Quetta); Ward, op. cit. xvii. p. 943 (Kashmir).

A resident species, collecting in large flocks in autumn in the scrub-jungle above Marai, about Shinauri, and in the wooded nullahs of the northern slopes of the Samana—these being its favourite haunts, but odd birds occur all over the District. Mr. Donald tells me that it nests freely near the Tera Kotal above Shinauri and north of the Samana. It occurs also in the Kurram Valley, and probably breeds there, but may still be seen in flocks in May.

[1305.] TURTUR FERRAGO. The Indian Turtle-Dove.

Fulton, J. B. N. H. S. xvi. p. 60 (common in Lower Chitral in summer); Rattray, t. c. p. 663 (common in the Murree Hills); Ward, op. cit. xvii. p. 943 (common in Kashmir).

Small numbers migrate through Kohat from mid-April till the 3rd or 4th of May, returning in September and October. Mr. Donald has found it nesting on the Samana, while I shot a specimen there as late as the 4th of November. It is common in summer in the woods of the Safed Koh, from 7000 feet to tree-limit.

[1309.] TURTUR CAMBAYENSIS. The Little Brown Dove.

Rattray, J. B. N. H. S. xii. p. 344 (Thall: common); Marshall, op. cit. xv. p. 353 (resident at Quetta, largely reinforced in summer); Fulton, op. cit. xvi. p. 60 (Chitral: probably common); Ward, op. cit. xvii. p. 943 (Kashmir).

A resident in the District and abundant at all seasons. Common in the Kurram Valley in summer up to 6500 feet, and occurring at least up to 8000 feet, at which height Major Magrath shot an example.

[1310.] Turtur risorius. The Indian Ring-Dove.

Rattray, J. B. N. H. S. xii. p. 344 (Thall: common); Marshall, op. cit. xv. p. 355 (common summer visitor); Fulton, op. cit. xvi. p. 60 (common in summer); Cumming, t. c. p. 691 (very rare in Seistan); Ward, op. cit. xvii. p. 943 (Kashmir).

Abundant in summer, the majority leaving in autumn, though many stay for the winter. In the Kurram Valley the bird is common up to Dandar, but rather scarce higher up. I have met with it, however, as high as 8500 feet.

[1311.] Œnopopelia tranquebarica. The Red Turtle-Dove.

Rattray, J. B. N. H. S. xii. p. 345 (rare at Thall); Ward, op. cit. xvii. p. 943 (rare in Kashmir).

A summer visitor to the District, and fairly numerous from the second week in April till August.

[1316.] Pterocles arenarius. The Black-bellied Sand-Grouse.

Rattray, J. B. N. H. S. xii. p. 345 (Thall: passes through in March); Marshall, op. cit. xv. p. 353 (Quetta: common in autumn and spring); Cumming, op. cit. xvi. p. 691 (said to occur in Seistan); Ward, op. cit. xvii. p. 943 (Jummu).

Large flocks occur in the cold weather in the fields around Doaba and occasionally round Lachi and Dhano. I flushed a bird on the 21st of June, 1906, on the stony plain near Dhandar in the Kurram Valley, which was possibly breeding in the neighbourhood.

[1317.] Pterocles fasciatus. The Painted Sand-Grouse.

Ward, J. B. N. H. S. xvii. p. 944 (Jummu).

A rare bird, probably resident. Mr. Donald told me that he had frequently flushed a pair of strange Sand-Grouse in the scrub-jungle west of Shinauri (3800 feet), but that for a long time they managed to escape. Eventually, however, one was brought to bag and on being compared with Hume and Marshall's 'Game Birds of India' was found to correspond exactly with this species. This is not the first record of its occurrence west of the Indus. In 1902, Major Barton, of the Guides, sent a skin to the Bombay Natural History Society, and in a note to the Journal (vol. xiv. p. 606) wrote that the bird was shot every year near Mardan and that it was said to be resident.

[1321.] PTEROCLURUS EXUSTUS. The Common Sand-Grouse.

A resident in Kohat, but not very common. *Pteroclurus alchata* should occur, but we have not met with it, nor has Mr. Donald.

[1342.] LOPHOPHORUS REFULGENS. The Monál.

Fulton, J. B. N. H. S. xvi. p. 61 (common in Lower Chitral); Ward, op. cit. xvii. p. 944 (common in Kashmir).

Fairly numerous on the Safed Koh from 9000 feet to tree-limit. I came across young ones fairly strong on the wing on the 27th of June.

[1355.] COTURNIX COMMUNIS. The Grey Quail.

Rattray, J. B. N. H. S. xii. p. 345 (Thall: passes through in spring and autumn, a few are resident); Marshall, op. cit. xv. p. 353 (Quetta: a few occur in spring and autumn); Fulton, op. cit. xvi. p. 61 (Chitral: passes through in spring, a few stay); Cumming, t. c. p. 692 (Seistan: fairly common; nests in March and April); Ward, op. cit. xvii. p. 944 (summer visitor, nesting).

Passes through in varying numbers from about the third week in March till the middle of May, and returns in August and September. Forty-six brace to two guns is the best morning's bag that I remember being made. Every year a few pairs stay to nest. Colonel Rattray found four eggs on the 21st of April near Thall. Mr. Donald has come across several nests, on one occasion actually treading on the sitting bird.

[1356.] COTURNIX CORAMANDELICA. The Rain Quail.

Ward, J. B. N. H. S. xvii. p. 944. (A rare visitor: has been known to nest in Kashmir.)

Two or three examples are yearly shot in Kohat about May; the bird probably nests in the District.

[1370.] CACCABIS CHUCAR. The Chukor.

Rattray, J. B. N. H. S. xii. p. 345 (Thall: a common resident); Marshall, op. cit. xv. p. 353 (Quetta: very common); Fulton, op. cit. xvi. p. 61 (very common, ranging up to 12,000 feet); Ward, op. cit. xvii. p. 944 (found everywhere in Kashmir).

662. Sex? Marai, 3000 ft., 9th March.

763. ♀ ad. Kohat, 1850 ft., 30th March.

Resident, and fairly numerous from the plains up to at least 8000 feet in the Safed Koh.

[1371.] AMMOPERDIX BONHAMI. The Sisi Partridge.

Rattray, J. B. N. H. S. xii. p. 345 (Thall: a fairly common resident); Marshall, op. cit. xv. p. 353 (Quetta: very common); Cumming, op. cit. xvi. p. 692 (Seistan: scarce).

A common resident on the stony hills of Kohat and the Kurram Valley up to about 6000 feet, and abundant in the more remote parts, where it is less persecuted.

[1372.] FRANCOLINUS VULGARIS. The Black Partridge.

Rattray, J. B. N. H. S. xii. p. 345 (Thall: abundant); Marshall, op. cit. xv. p. 353 (Quetta: occurs about the foothills); Cumming, op. cit. xvi. p. 692 (Seistan: abundant).

A resident, and common in the Mazri scrub (dwarf-palm) of the Lower Kurram and Upper Miranzai Valleys, and, in fact, wherever there is plenty of Mazri.

[1375] FRANCOLINUS PONDICERIANUS. The Grey Partridge.

Rattray, J. B. N. H. S. xii. p. 345 (Thall: very common); Ward, op. cit. xvii. p. 944 (Kashmir: occurs in the plains).

A resident and fairly numerous, but less so than the Sisi. It is found on much the same ground, though more frequently about cultivated spots, and up to about the same altitude in the Kurram Valley.

[1378.] TETRAOGALLUS HIMALAYENSIS. The Himalayan Snow-Cock.

Fulton, J. B. N. H. S. xvi. p. 62 (Chitral: found in winter down to 6000 ft. and in summer up to 16,000 ft.); Ward, op. cit. xvii. p. 945 (common at high altitudes).

This grand bird occurs in summeron the upper slopes of the Safed Koh, from about 9000 feet to the summit, but is rather scarce. Like the Chukor, it would often escape notice were it not so talkative.

[1384.] Turnix tanki. The Indian Button-Quail.

A summer visitor in small numbers, breeding on the grass-farm.

[1387.] **Rallus aquaticus.** The Water-Rail.

Ward, J. B. N. H. S. xvii. p. 945 (breeds in the Valley of Kashmir).

402. ♂. Dhand, 1200 ft., 17th November, 1906.

This example, shot in reeds at Dhand Tank, was the only one met with.

[1393.] Porzana pusilla. The Eastern Baillon's Crake.

Rattray, J. B. N. H. S. xii. p. 345 (large numbers pass through about the end of May); Ward, op. cit. xvii. p. 945 (Kashmir).

692, 693. ♀ ♀ ads. Lachi, 1540 ft., 17th March.

Capt. Keen shot the first example on the 11th of February, 1906, and from then till mid-April single individuals were met with at intervals. About the latter date the main body appeared, and up to the 20th of May large numbers continued to pass through, frequenting the grass-farm, irrigated crops, and cover near water. The bird has not been observed on the autumn migration, though common at Rawal Pindi (120 miles east) at that season.

[1394.] Porzana maruetta. The Spotted Crake.

694. ♂ ad. Lachi, 1540 ft., 17th March.

Passes through Kohat in fair numbers in March and April, frequenting reed-beds and irrigated crops. A great skulker, which may frequently be located by its peculiar loud call-note.

[1398.] Amaurornis fuscus. The Ruddy Crake.

Ward, J. B. N. H. S. xvii. p. 945 (breeds in Kashmir).

281. ♂ ad. Dandar, 4700 ft., 23rd June, 1906.

I found numerous nests of this species in a marsh near Dandar, in the Kurram Valley. They are usually fairly well concealed in clumps of reeds or grass, and are merely hollows scantily lined with bits of these plants. The first eggs are laid about the middle of June, the clutch varying from five to seven. In colour they are creamy-white profusely spotted with pale red, and the average measurements are 1·22 × ·82 in. This species has brought the art of skulking to a high state of perfection, and it is only when the young have emerged from the shell that it shews itself at all.

[1402.] Gallinula chloropus. The Water-Hen.

Ward, J. B. N. H. S. xvii. p. 945 (Kashmir).

A rather scarce winter visitor to Kohat; more numerous at Dhand than elsewhere. It occurs chiefly on migration in March and April, when it is frequently caught. It breeds in the Kurram Valley in small numbers. I found a nest at Dandar on the 9th of July.

[1405.] Fulica atra. The Coot.

Marshall, J. B. N. H. S. xv. p. 353 (Quetta: common in winter); Fulton, op. cit. xvi. p. 62 (Chitral: shot in March at Drosh); Cumming, t. c. p. 693 (Seistan: a common resident); Ward, op. cit. xvii. p. 945 (Kashmir).

Abundant on Dhand tank throughout the cold weather, occurring also in other suitable places in small numbers. I met with a pair near Lachi as late as the 20th of May, so that a few are probably resident.

[1407.] Grus communis. The Common Crane.

Rattray, J. B. N. H. S. xii. p. 345 (passes over Thall in great numbers: often driven back after storms).

Large flocks pass over the District from the third week in February till the end of March, returning in August and September, but rarely halting except in the Latammar Nullah or at Dhodha.

Residents at Parachinar say that Cranes on migration fly straight over the Safed Koh Range (lowest point 11,760 feet) and not round the western shoulder, but that they are frequently forced to turn back by storms. Major Magrath, too, has often observed them returning S.E. to Bannu after a storm.

[1411.] ANTHROPOÏDES VIRGO. The Demoiselle Crane.

Rattray, J. B. N. H. S. xii. p. 346 (Thall); Cumming, op. cit. xvi. p. 693 (Seistan: a few occur in February and March); Ward, op. cit. xvii. p. 945 (a winter visitor to Kashmir).

This beautiful species passes through in big flocks from the end of March till about the middle of April (last flock seen on the 17th), returning in September.

[1413.] OTIS TETRAX. The Little Bustard.

Ward, J. B. N. H. S. xvii. p. 945 (Kashmir: one shot in December).

Very rare. We have never met with this species, but Mr. Donald says that he has twice flushed the "Butterfly" Bustard, as he calls it, from its peculiar flight, when hawking the Houbara.

[1415.] HOUBARA MACQUEENI. The Houbara Bustard.

Marshall, J. B. N. H. S. xv. p. 353 (passes through Quetta in March and April); Cumming, op. cit. xvi. p. 693 (fairly common in Seistan in spring: said to breed).

A rather scarce winter visitor, but fairly plentiful on the spring migration in March. Mr. Donald frequently takes this Bustard with his trained Cherrug Falcon (*Falco cherrug*).

[1418.] ŒDICNEMUS SCOLOPAX. The Stone-Curlew.

Marshall, J. B. N. H. S. xv. p. 353 (rare at Quetta); Ward, op. cit. xvii. p. 945 (Kashmir).

I only once met with this species in Kohat and that was near Sheikhan on the 22nd of August, 1906. Mr. Donald says that it occurs commonly in the desert-country between Yamrud and the mouth of the Khyber Pass, *i. e.* about 40 miles N.E. of Kohat.

[1427.] GLAREOLA LACTEA. The Small Indian Pratincole.

Rattray, J. B. N. H. S. xii. p. 346 (Thall); Ward, op. cit. xvii. p. 945 (said to occur in Kashmir).

A summer visitor from April till August. Col. Rattray found it breeding freely on the gravel banks in the Kurram River in April. It was very common when we passed through Thall in April and on our return in May.

[1431.] Sarcogrammus indicus. The Red-wattled Plover.

Rattray, J. B. N. H. S. xii. p. 346 (common at Thall); Marshall, op. cit. xv. p. 353 (only one seen at Quetta, 5600 ft.); Ward, op. cit. xvii. p. 946 (a few occur at about 5000 ft. in Kashmir).

A resident in the plains; abundant in summer, but scarce in winter.

[1436.] Vanellus vulgaris. The Lapwing.

Rattray, J. B. N. H. S. xii. p. 346 (a few pass through Thall); Marshall, op. cit. xv. p. 353 (winter visitor to Quetta); Fulton, op. cit. xvi. p. 62 (Chitral: fairly common up to the end of May; probably breeds); Ward, op. cit. xvii. p. 946 (winter visitor).

Fairly common from October till the third week in March.

[1437.] Chettusia gregaria. The Sociable Plover.

Rattray, J. B. N. H. S. xii. p. 346 (large flocks pass through Thall in April); Fulton, op. cit. xvi. p. 62 (Chitral: common in winter; saw some at Drosh, 4300 ft., at the end of May, probably breeds about there); Ward, op. cit. xvii. p. 946 (scarce in Kashmir).

I shot a solitary individual on the 6th of March on the parade-ground at Fort Lockhart, where it had alighted during parade. Many of those passing through in small flocks are in full plumage with black and chestnut on the abdomen.

[1438.] Chettusia leucura. The White-tailed Plover.

Cumming, J. B. N. H. S. xvi. p. 694 (Seistan, 1700 ft., May 6th).

Mr. Donald shot a specimen on the grass-farm on the 31st of March, 1905, and sent it to Major Magrath for identification. This is the only occurrence in Kohat that I know of. In

Bannu, however, it is very common in winter about the larger marshes.

[1446.] ÆGIALITIS ALEXANDRINA. The Kentish Plover.

A somewhat rare spring visitor, arriving towards the end of February and disappearing before the end of March Major Magrath has found it common in Bannu in spring and autumn.

[1447.] ÆGIALITIS DUBIA. The Little Ringed Plover.

Rattray, J. B. N. H. S. xii. p. 346 (Thall); Marshall, op. cit. xv. p. 353 (common at Quetta in spring); Cumming, op. cit. xvi. p. 694 (fairly plentiful in Seistan); Ward, op. cit. xvii. p. 946 (Kashmir).

This species passes through Kohat in small flocks from about the end of February till the middle of May (last seen on the 20th). The numbers vary a good deal. In the spring of 1905 Major Magrath noticed a great many passing through, but in the following year comparatively few were seen. On the gravelly shores of the Kurram it breeds abundantly from Thall up to Dandar, at least Colonel Rattray found many nests near Thall, from the end of May onwards.

I once saw an individual trying to escape observation by lying flat on the ground with head and neck extended, after the fashion of the Stone-Curlew.

[1451.] HIMANTOPUS CANDIDUS. The Black-winged Stilt.

Marshall, J. B. N. H. S. xv. p. 353 (Quetta: common in March); Cumming, op. cit. xvi. p. 694 (scarce in Seistan); Ward, op. cit. xvii. p. 946 (breeds in Kashmir).

A rather rare visitor to Kohat from March till May (last seen on the 28th). Major Magrath says that it is very common in Bannu in spring.

[1460.] TOTANUS HYPOLEUCUS. The Common Sandpiper.

Marshall, J. B. N. H. S. xv. p. 353 (Quetta: occurs in April, but is rare); Fulton, op. cit. xvi. p. 62 (Chitral: one shot on May 30th); Ward, op. cit. xvii. p. 946 (breeds in Kashmir).

Occurs on passage in the spring and autumn, a few stragglers staying for the winter.

[1461.] Totanus glareola. The Wood-Sandpiper.

Fulton, J. B. N. H. S. xvi. p. 62 (Chitral : one shot on the 6th of May) ; Cumming, t. c. p. 695 (common in Seistan in May) ; Ward, op. cit. xvii. p. 946 (Kashmir).

Occurs in numbers on the spring migration in the irrigated fields round Kohat.

[1462.] Totanus ochropus. The Green Sandpiper.

Marshall, J. B. N. H. S. xv. p. 353 (Quetta : common in winter) ; Fulton, op. cit. xvi. p. 63 (Chitral : common in spring ; believed to breed in Chitral ; many found between 9000 and 14,000 ft. in July) ; Ward, op. cit. xvii. p. 946 (Kashmir).

Abundant on migration in April and May, and from the end of August till November ; the majority leave about that time, but many stay for the winter in the plains, and a few non-breeding birds through the summer. It passes up the Kurram Valley in spring in great force, but does not stay to breed.

[1463.] Totanus stagnatilis. The Marsh-Sandpiper.

Not at all common, but a few individuals pass through every year between February and the middle of May, being generally found about the irrigated parts of the grass-farm.

[1464.] Totanus calidris. The Redshank.

Cumming, J. B. N. H. S. xvi. p. 695 (Seistan) ; Ward, op. cit. xvii. p. 946, & xviii. p. 464 (fairly common in Kashmir in winter ; breeds in Ladak).

I have only met with one solitary example, and that was on the 17th of March near Lachi. Major Magrath, however, has found the bird very common in Bannu in winter.

[1466.] Totanus glottis. The Greenshank.

Ward, J. B. N. H. S. xvii. p. 946 (Kashmir).

A fairly common cold-weather visitor, arriving in October and leaving towards the end of April.

[1468.] Pavoncella pugnax. The Ruff.

Marshall, J. B. N. H. S. xv. p. 353 (Quetta : one shot in February) ; Ward, op. cit. xvii. p. 946 (a winter visitor to Kashmir).

Occurs in large flocks on the grass-farm and other suitable places from the end of February till the middle of May (I shot a single bird on the 17th).

[1471.] Tringa minuta. The Little Stint.

Fulton, J. B. N. H. S. xvi. p. 63 (common in Chitral in April and May); Ward, op. cit. xvii. p. 946 (Kashmir).

Appears in small flocks towards the end of March, and is abundant about irrigated fields and shallow tanks, in company with Sandpipers, till the middle of May. Not met with in autumn.

[1474.] Tringa temmincki. Temminck's Stint.

Arrives and leaves about the same time as the Little Stint, but unlike that species is almost always found singly. I have only once met with it in autumn, on the 26th of October.

[1482.] Scolopax rusticula. The Woodcock.

Rattray, J. B. N. H. S. xii. p. 354 (Thall: a rare winter visitor); Marshall, op. cit. xv. p. 354 (Quetta: winter visitor); Fulton, op. cit. xvi. p. 63 (resident in Lower Chitral, but scarce); Rattray, t. c. p. 663 (nests freely in the Murree Hllls above 8500 ft.); Cumming, t. c. p. 695 (scarce in Seistan); Ward, op. cit. xvii. p. 946 (breeds in Kashmir).

A winter visitor from November till the middle of March, but not common: there are, however, several favoured spots in the District which can usually be counted on to hold one bird or more. In the gardens of Kohat itself some half-dozen are shot every winter.

[1484.] Gallinago cœlestis. The Common Snipe.

Rattray, J. B. N. H. S. xii. p. 346 (Thall: common in March); Marshall, op. cit. xv. p. 354 (Quetta: fairly common); Fulton, op. cit. xvi. p. 63 (Chitral: a few noticed in April); Cumming, t. c. p. 695 (Seistan: abundant from September to April); Ward, op. cit. xvii. p. 947 (breeds in Kashmir).

Passes through in varying numbers from the last week in January till the middle of April. Few stay in Kohat, but in the Kurram Valley, where there is plenty of good feeding-ground, bags of fifty and sixty couples of this and the next species are often made in a few hours. On the return passage in autumn comparatively few halt.

[1487.] Gallinago gallinula. The Jack Snipe.

Rattray, J. B. N. H. S. xii. p. 347 (Thall); Marshall, op. cit. xv. p. 354 (Quetta: occasionally met with); Cumming, op. cit. xvi. p. 695 (Seistan: said to be fairly common); Ward, op. cit. xvii. p. 947 (Kashmir).

The same may be said of this bird as of the last, but it is not quite so common.

[1488.] Rostratula capensis. The Painted Snipe.

Rattray, J. B. N. H. S. xii. p. 347 (Thall in March); Ward, op. cit. xvii. p. 947 (a resident in the Kashmir Valley).

Rare in Kohat. Capt. Keen shot a specimen in April 1904, while Mr. Donald and Major Venour shot several early in July 1907 and saw others. In the Kurram Valley it is a permanent resident, but is not common.

[1498.] Hydroprogne caspia. The Caspian Tern.

Rattray, J. B. N. H. S. xii. p. 347 (Thall); Cumming, op. cit. xvi. p. 696 (common in Seistan).

Colonel Rattray saw a party of seven near Thall on the 22nd of May and shot one. Capt. Keen and Mr. Boyle observed a large solitary Tern on the Toi near Hangu between the 20th and 26th of March, 1906, and from their description it must, I think, have belonged to this species.

[Major Magrath has also met with *Larus ridibundus* and *L. cachinnans* in Bannu, and as they both occur in Kashmir, they probably also do so in the Kurram Valley.]

[1499.] Sterna anglica. The Gull-billed Tern.

Rattray, J. B. N. H. S. xii. p. 347 (Thall: common in March); Cumming, op. cit. xvi. p. 696 (Seistan: common).

Small flocks pass through Kohat from the beginning of April till May (last seen on the 5th), and are then usually to be met with about the grass-farm or feeding in irrigated fields.

[1504.] STERNA MELANOGASTER. The Black-bellied Tern.
Cumming, J. B. N. H. S. xvi. p. 696 (Seistan: not common).

Major Magrath observed this species in some irrigated fields near Doaba on the 18th of May, 1907. In Bannu he says that it is common.

[1526.] PHALACROCORAX CARBO. The Common Cormorant.
Marshall, J. B. N. H. S. xv. p. 354 (Quetta: a few seen in March).

A fairly common bird on the Indus between Khushalgarh and Makhud. It also occurs occasionally up the Kohat Toi; Capt. Lyall sent me a specimen that he had shot on this stream near Hangu.

[1527.] PHALACROCORAX FUSCICOLLIS. The Indian Shag.
Rattray, J. B. N. H. S. xii. p. 347.

Colonel Rattray shot an example near Thall in February, 1898, after a heavy storm in the Kurram Valley: it was the only one that he saw. We have never met with this species.

[1544.] PLEGADIS FALCINELLUS. The Glossy Ibis.
1. Juv. Kohat, 1760 ft., 22nd August.

The only example that we have seen was a bird of the year which Mr. Donald shot in his garden on the 22nd of August, 1905, and sent to Major Magrath, who forwarded the skin to the Secretary of the Bombay Natural History Society. Mr. Donald flushed another on the grass-farm.

[1545.] PLATALEA LEUCORODIA. The Spoonbill.
Rattray, J. B. N. H. S. xii. p. 347 (Thall: a big flock, at the end of May).

I came across four Spoonbills on the grass-farm on the 30th of May, 1906. The following year, on the 30th of April, Major Magrath and I were standing on the Peiwar Kotal (8200 feet) when a flock of about twenty came up from the Kurram and passed close overhead; but apparently not relishing the strong north-west wind which met them as they topped the Kotal (*i. e.* pass), they wheeled round and flew back down the valley.

[1546.] **Ciconia alba.** The White Stork.

Occurs regularly on the spring migration either singly or in small parties. In the Kurram Valley we saw a flock of some two hundred near Dandar on the 20th of April. Single individuals continue to pass through up till the end of May.

[1547.] **Ciconia nigra.** The Black Stork.

Ward, J. B. N. H. S. xvii. p. 947 (occurs early in spring in Kashmir).

Not common; but small flocks are seen every winter from January till the end of March.

[1554.] **Ardea manillensis.** The Eastern Purple Heron.

I flushed three individuals out of the Lachi reed-bed on the 20th of May, 1906, while Major Magrath and I came on a small flock in the reeds at Dandar in the Kurram Valley in April 1907. These are the only occasions on which we have met with this Heron.

[1555.] **Ardea cinerea.** The Common Heron.

Rattray, J. B. N. H. S. xii. p. 347 (Thall: one or two always about); Marshall, op. cit. xv. p. 354 (Quetta: common, especially in March); Fulton, op. cit. xvi. p. 63 (only a few seen in Chitral); Cumming, t. c. p. 696 (common in Seistan); Ward, op. cit. xvii. p. 947 (abundant in the Vale of Kashmir).

Fairly common in suitable places, especially along the Kurram River. Probably a resident species.

[1559.] **Herodias alba.** The Large Egret.

Rattray, J. B. N. H. S. xii. p. 347 (Thall); Marshall, op. cit. xv. p. 354 (Quetta: fairly common in February); Ward, op. cit. xvii. p. 947 (Kashmir).

Colonel Rattray writes:—"A few birds appeared at Thall in the middle of May for a day or two; one was shot and brought to me, it was in splendid breeding-plumage."

We have not met with this species ourselves in Kohat, though Major Magrath has found it quite common in Bannu in winter.

[1565.] Ardeola grayi. The Pond-Heron.

Ward, J. B. N. H. S. xvii. p. 947 (breeds in Kashmir).

Abundant in the plains in summer, arriving in the beginning of April, and nesting freely in the cantonments. A few stay through the winter, if fairly mild.

[1568.] Nycticorax griseus. The Night-Heron.

Rattray, J. B. N. H. S. xii. p. 347 (rare, but presumably resident at Thall); Ward, op. cit. xvii. p. 947 (breeds in Kashmir).

Personally I have only met with this species in summer from April onwards; but a few individuals appear to be resident, as Colonel Rattray observed it at Thall in winter, and Major Magrath at Bannu. It occurs in Kohat and the Kurram Valley (up to 4800 feet at least), but is not common.

[1570.] Ardetta minuta. The Little Bittern.

Cumming, J. B. N. H. S. xvi. p. 696 (Seistan: one specimen); Ward, op. cit. xvii. p. 948 (breeds in Kashmir).

I found a nest with seven slightly incubated eggs in a reed-bed near Dandar on the 9th of July, 1906, and shot the male bird. The nest was a flat pad of reeds on a stump, three feet above the water. I have several times put up a Little Bittern, either this species or *A. sinensis*, in the reed-beds in the plains in April and May, but have not secured a specimen, so cannot say to which form it belonged.

[1574.] Botaurus stellaris. The Bittern.

Rattray, J. B. N. H. S. xii. p. 347 (Thall: very rare): Cumming, op. cit. xvi. p. 696 (Seistan: one shot in December); Ward, op. cit. xvii. p. 947 (a winter visitor, but not common).

72. Adult. Kohat, 1600 ft., 7th January.

A fairly common winter visitor, both to Kohat and the Kurram Valley. Leaves early in April (last seen on the 8th).

[1579.] Anser ferus. The Grey Lag-Goose.

Cumming, J. B. N. H. S. xvi. p. 697 (common in Seistan in winter); Ward, op. cit. xvii. p. 918 (abundant in winter).

Mr. Donald has shot this species on the grass-farm; but it is very rare in Kohat, though occurring regularly in the Kurram Valley in spring.

[1588.] Casarca rutila. The Brahminy Duck or Ruddy Sheldrake.

Rattray, J. B. N. H. S. xii. p. 347 (rare at Thall); Marshall, op. cit. xv. p. 354 (Quetta: occurs in February and March); Ward, op. cit. xvii. p. 948 (a winter visitor to Kashmir, breeds in Ladak).

Passes through Kohat from the middle of February till the middle of April, but is not common.

[1587. Tadorna cornuta (S. G. Gm.). Major Magrath writes that the Sheldrake is a regular spring visitor to Bannu in small numbers.]

[1592.] Anas boscas. The Mallard.

Rattray, J. B. N. H. S. xii. p. 347 (Thall: common in March); Marshall, op. cit. xv. p. 354 (Quetta: common in winter); Fulton, op. cit. xvi. p. 64 (passes through Chitral); Cumming, t. c. p. 697 (Seistan: common); Ward, op. cit. xvii. p. 947 (a few nest in Kashmir).

A winter visitor and one of our commonest Ducks; it disappears towards the end of March.

[1595.] Chaulelasmus streperus. The Gadwall.

Rattray, J. B. N. H. S. xii. p. 348 (Thall: common in March); Cumming, op. cit. xvi. p. 697 (not common in Seistan); Ward, op. cit. xvii. p. 948 (Kashmir).

Scarce in winter, but becoming fairly numerous in spring. Some stay very late: I shot an individual out of a party of three on one of the reedy tanks near Lachi on the 20th of May, 1906; they appeared to fly quite well. I was unable to visit this spot again before autumn, so cannot say whether the bird nests there or not. Colonel Rattray also writes:—"One male was shot out of a party of three in June [at Thall] and brought to me."

[1597.] Nettium crecca. The Common Teal.

Rattray, J. B. N. H. S. xii. p. 348 (Thall: very common in spring); Marshall, op. cit. xv. p. 354 (Quetta: common in winter); Fulton, op. cit. xvi. p. 64 (Chitral: common on migration); Cumming, t. c. p. 697 (Seistan: abundant and apparently resident); Ward, op. cit. xvii. p. 948 (Kashmir: occurs in June and July in the Valley, but no eggs found).

Quite our commonest Duck and the first to arrive. The 9th of September is the earliest date on which I have noted it. As with all Ducks in Kohat, it is much more numerous in autumn and spring than in winter. It leaves towards the end of April.

[1599.] MARECA PENELOPE. The Wigeon.

Fulton, J. B. N. H. S. xii. p. 64 (passes through Chitral); Cumming, op. cit. xvi. p. 698 (Seistan: winter visitor); Ward, op. cit. xvii. p. 948 (fairly common in winter in Kashmir).

Not common, but usually occurs in March and April.

[1600.] DAFILA ACUTA. The Pintail.

Rattray, J. B. N. H. S. xii. p. 348 (Thall: one flock seen in March); Marshall, op. cit. xv. p. 354 (Quetta: fairly common in winter); Fulton, op. cit. xvi. p. 64 (Chitral: passes through in February and March); Cumming, t. c. p. 698 (Seistan: a winter visitor); Ward, op. cit. xvii. p. 948 (common on passage in Kashmir).

Passes through in small numbers in February and March.

[1601.] QUERQUEDULA CIRCIA. The Garganey.

Ward, J. B. N. H. S. xvii. p. 948 (Kashmir: common on passage).

Mr. Donald shot one of a pair (a male) on the grass-farm in October; this is the only occurrence of the Garganey in the District that I have heard of.

[1602.] SPATULA CLYPEATA. The Shoveller Duck.

Rattray, J. B. N. H. S. xii. p. 348 (Thall: common in spring); Marshall, op. cit. xv. p. 354 (Quetta: fairly common in winter); Fulton, op. cit. xvi. p. 64 (Chitral: passes through in March and April); Cumming, t. c. p. 698 (Seistan: common in winter and probably resident); Ward, op. cit. xvii. p. 948 (Kashmir).

Not common in autumn and winter; but large numbers pass through in spring. Some individuals stay very late, and I have noticed them all through April and up to the 20th of May.

[1604.] Netta rufina. The Red-crested Pochard.

Rattray, J. B. N. H. S. xii. p. 348 (Thall: occurs in March); Marshall, op. cit. xv. p. 354 (Quetta: common in winter); Cumming, op. cit. xvi. p. 698 (Seistan: common in winter, probably resident); Ward, op. cit. xvii. p. 948 (Kashmir: common in February).

Not common, but found throughout the winter at Dhand Tank, and occasionally elsewhere, up till the end of March.

[1605.] Nyroca ferina. The Pochard.

Marshall, J. B. N. H. S. xv. p. 354 (Quetta: common in winter); Cumming, op. cit. xvi. p. 698 (Seistan: common and doubtless resident); Ward, op. cit. xvii. p. 948 (Kashmir).

Next to the Teal this is our commonest Duck in the cold weather.

[1606.] Nyroca ferruginea. The White-eyed or Ferruginous Duck.

Marshall, J. B. N. H. S. xv. p. 354 (Quetta: common in February); Cumming, op. cit. xvi. p. 698 (Seistan: common in winter); Ward, op. cit. xvii. p. 948 (Kashmir: a common resident).

Less common than the last species, but fairly abundant on Dhand Tank in the winter. It leaves towards the end of March.

[1609.] Nyroca fuligula. The Tufted Pochard.

Marshall, J. B. N. H. S. xv. p. 354 (Quetta: common in March); Cumming, op. cit. xvi. p. 698 (a winter visitor in Seistan); Ward, op. cit. xvii. p. 948 (common, especially in March).

I have only met with this Duck at Dhand, where it is abundant and occurs throughout the winter, at least up till the end of March.

[1611.] Erismatura leucocephala. The White-headed Duck.

Marshall, J. B. N. H. S. xv. p. 354 (Quetta : February) ; Cumming, op. cit. xvi. p. 699 (Seistan : very common in winter, perhaps resident) ; Ward, op. cit. xvii. p. 949 (not common, but a regular winter visitor in Kashmir).

Very rare. I observed single birds at Dhand on the 18th of November, 1906, and the 21st of February, 1907, but could not get a shot ; it is, however, an unmistakable species. Capt. MacNab, I.M.S., shot one at Mardan (thirty miles north of our limits) on the 12th of November, 1899 (*vide* J. B. N. H. S. xiii. p. 182).

[1612.] Mergus albellus. The Smew.

Rattray, J. B. N. H. S. xii. p. 348 (Thall : February) ; Marshall, op. cit. xv. p. 354 (Quetta : common in winter) ; Ward, op. cit. xvii. p. 949 (Kashmir : often seen on the Wular Lake ; breeds on the Shyoh).

An immature bird was brought in to Major Magrath on the 26th of December, 1905. I also observed a big flock on the Indus on the 18th of February, 1907.

[1613.] Merganser castor. The Goosander.

Ward, J. B. N. H. S. xvii. p. 949 (shot on the Wular Lake and seen on the Indus).

A rare winter visitor, occurring on the Indus, where Mr. Donald has shot it.

[1616.] Podicipes nigricollis. The Eared Grebe.

403 & 404. Dhand, 1200 feet, 17th November.

Occurs regularly every winter on Dhand Tank, staying at least up till the end of March. The first example that I saw was one Capt. Keen shot in November 1905 at Jand, just beyond our limits.

[1617.] Podicipes albipennis. The Indian Little Grebe.

Marshall, J. B. N. H. S. xv. p. 354 (Quetta : common in spring) ; Cumming, op. cit. xvi. p. 699 (Seistan : resident) ; Ward, op. cit. xvii. p. 949 (resident in Kashmir).

A very common resident at Dhand, while a few individuals occur in other suitable localities.

XI.—*Contributions to the Ornithology of Egypt.*—No. II. *Birds of the Province of Giza.* Part 1. By Michael J. Nicoll, F.Z.S., M.B.O.U.

(Plate IV.)

The following paper is chiefly based on a collection of birds made by myself during a residence of two and a half years at Giza, supplemented by notes from Captain Flower. I do not offer it as a complete list of all the birds occurring in the Province, as I have only mentioned such species as have come under my personal observation or have been vouched for by competent correspondents and friends, amongst whom I should specially mention Mr. E. W. Buckley, Mr. G. E. Burnett-Stuart, Capt. J. W. H. Seppings, and Capt. J. B. Jenkinson.

Owing to the number of birds on which I have notes it will be necessary to divide the paper into three parts, in the course of which several species will be recorded for the first time from Egypt.

The resident birds of Egypt are few in number as regards species, compared with the migrants, and are somewhat local in their distribution, for which reason it will be seen that several well-known Egyptian forms are not included in my paper.

The Province of Giza extends for some seventy miles along the banks of the Nile, from about seventeen miles north of Cairo to about six miles north of Beni Souf. North of Cairo it is confined to the west bank of the river. Immediately above the town, however, both banks are included, while for about the last seventeen miles it includes the east bank only.

The Province consists of a narrow strip of alluvium, varying from about six miles at its greatest breadth, which is on the west bank only, opposite Cairo, to three and a half miles at Kafr Ammar, where both banks are included. The rest is desert, the highest surveyed point being 330 metres (or 1083 feet) above the Wadi Hof near Helwan.

1. Turdus musicus Linn.

Turdus musicus Shelley, Birds of Egypt, p. 66.

The Song-Thrush is a regular winter visitor, arriving in late autumn and remaining till early spring. I have on several occasions counted from twelve to fifteen examples together on one of the lawns in the Giza Zoological Gardens about sunset. During the day they frequent the tops of the various species of *Ficus*, where they feed on the small figs. The examples which I have examined in Egypt are paler above than most British specimens. I have frequently heard the Thrush singing in the Giza Zoological Gardens.

2. Turdus iliacus Linn.

The Redwing, which is not mentioned by Shelley or any other writer on Egyptian birds—so far as I can ascertain,—appears to be a winter and spring visitor here in small numbers. I have never met with more than two individuals together. I possess a male specimen, obtained in the Zoological Gardens on March 18th, 1907.

3. Turdus pilaris Linn.

Turdus pilaris Shelley, p. 65.

The Fieldfare seems to be a rare visitor to Egypt. On November 13th, 1906, I watched an example feeding on one of the lawns in the Zoological Gardens, and on the 21st of that month I saw five individuals flying high over the same part of the Gardens. A few days later I found a number of feathers of a Fieldfare—the bird had evidently been killed by a Sparrow-Hawk.

4. Turdus merula Linn., subsp.?

Turdus merula Shelley, p. 66.

The Blackbird is a regular winter visitor to Egypt. In some years it is more numerous than in others. All the individuals that I have met with have been very shy, and in the Zoological Gardens they keep to the thickest bushes and are rarely seen on the lawns.

5. Turdus torquatus Linn.

Turdus torquatus Shelley, p. 67.

I have an adult male Ring-Ousel in winter-plumage, which

I shot on December 9th, 1906, in the Zoological Gardens. It was in company with several others. I have since heard and seen this species on two or three occasions during the winter months.

6. Monticola saxatilis (Linn.).

Monticola saxatilis Shelley, p. 70.

The Rock-Thrush appears to be migratory in the province. I have at present only seen it during the spring migration in April.

7. Monticola cyanus (Linn.).

Monticola cyanus Shelley, p. 70.

I possess two male specimens of the Blue Rock-Thrush—one shot at the Pyramids of Giza on November 9th, 1906, and the other from Abu Roash on April 6th, 1907. I have personally met with this species in spring and autumn in the province of Giza.

8. Saxicola œnanthe (Linn.).

Saxicola œnanthe Shelley, p. 71.

The Common Wheatear appears to be a regular spring and autumn migrant, though, so far as I have been at present able to ascertain, it does not visit us in large numbers. On arrival here in autumn the adult birds are in full winter-plumage—the feathers of the upper parts and the wing-coverts and quills are broadly edged with brown. I can at present see no signs of any spring moult in adults of this species; the grey upper parts of the male are assumed by a casting of the brown edges of the feathers of the winter-plumage and the quill-feathers turn entirely black—in adult males—by the same process.

9. Saxicola œnanthe leucorrhoa Stejneger.

This large form of the Common Wheatear passes through Egypt on both spring and autumn migrations, though it always appears later than the common form. I have from the province of Giza an adult male shot by Capt. J. W. H. Seppings on May 15th, 1907, and an adult male shot by myself on November 17th, 1908.

10. SAXICOLA ISABELLINA Rüppell.

Saxicola saltatrix Shelley, p. 72.

The Isabelline Wheatear seems to be resident in Egypt, for I have seen specimens shot in January, February, April, August, September, and December. This species frequents the cultivated lands more than the desert in the Giza Province. It is by far the commonest Wheatear found in the alluvial districts, and it is, in fact, the only Wheatear which is found on cultivated ground throughout the year. It moults in autumn. The sexes are indistinguishable, both as regards size and colour.

11. SAXICOLA OCCIDENTALIS MELANOLEUCA Güldenst.

Muscicapa melanoleuca Güldenstadt, Nov. Comp. Petr. xix. p. 468, pl. xv. (1775).

? *Saxicola eurymelæna* Shelley, p. 73.

This form of the Black-throated Wheatear, which has the black extending to the upper breast, is a regular spring and autumn visitor to Egypt. I have seen it during both migrations in the province of Giza, but at present the only examples that I have are individuals shot during the autumn migration. A splendid white-backed male frequented the Zoological Gardens for several days during the spring migration of 1907.

12. SAXICOLA STAPAZINA STAPAZINA.

Motacilla stapazina Linn. Syst. Nat. i. p. 331 (1766).

Saxicola aurita Temm. Man. d'Orn. vol. i. p. 241 (1820).

Saxicola amphileuca Shelley, p. 72.

Saxicola stapazina Salvadori, Ibis, 1904, p. 75.

The "Eastern" form of the Black-eared Chat seems to be a regular visitor in spring and autumn. I have examined the following specimens obtained in the Giza Province:—An adult male from Abbassia, April 10th, 1908 (Capt. J. B. Jenkinson); two adult males in full winter-plumage, obtained by myself at Giza, September 14th, 1908.

During the spring migration of 1907 I saw an example of this form in the Zoological Gardens.

In the spring the plumage of the Black-eared Chat becomes so much abraded that the feathers have an almost hair-like texture. There appears to be but one moult—in autumn.

13. Saxicola deserti Rüppell.

Saxicola deserti Shelley, p. 74.

A male of this species frequented the Zoological Gardens for several days during November 1906; on December 11th, 1908, I shot an adult male near the Giza Pyramids, and on February 4th, 1909, I saw several others near the same place.

14. Saxicola lugens Licht.

Saxicola lugens Shelley, p. 77.

This is the most abundant Chat in the desert, where it is resident. I have nine specimens collected at different times of year, from the Giza Pyramids and the Wadi Hof; in the latter place it is abundant. The sexes are superficially alike, but the female has shorter wings and the black is not so intense as that of the male. A young bird (August 11th, 1908) is sandy brown on the crown and upper parts; the wings and throat are, however, black, and at first sight it is possible to take it for an example of *Saxicola deserti*. The tail, however, is always *more* than half white.

In the 'Birds of Egypt' Shelley describes the present species as having the "top of the head and nape pale dusky." This, however, refers to birds in winter-plumage, that is, directly after the autumn moult. In spring these parts, in old males at any rate, are pure white.

15. Saxicola leucopygia Brehm.

Saxicola leucopygia Shelley, p. 79.

At present I have only met with this species in the Wadi Hof. In habits it is very much more shy than *S. lugens*, though the two may be found in the same locality. There are two varieties of this bird. Some examples have the crown of the head white, while in others it is black like the remainder of the upper parts, but the difference does not appear to be due either to sex or season. I have an adult pair with white crowns which I shot in February 1908, an adult and a young bird with black heads obtained in August of the same year, and three adults also with black heads obtained in December.

Saxicola monacha I have not yet met with.

16. Myrmecocichla melanura (Temm.).

On October 9th, 1907, I saw an example at close quarters, perched on a wire fence in the Zoological Gardens (*cf.* 'Ibis,' 1908, pp. 201 & 544).

The species had not previously been recorded from Egypt.

17. Pratincola rubetra (Linn.).

Pratincola rubetra Shelley, p. 81.

The Whinchat passes through Giza on migration in small numbers in spring and autumn.

18. Pratincola rubicola (Linn.).

Pratincola rubicola Shelley, p. 81.

I have only met with this species during the winter months and have never heard of its occurrence during the summer. We have never met with *P. r. hemprichi.*

19. Ruticilla phœnicurus (Linn.).

Ruticilla phœnicurus Shelley, p. 82.

The Redstart is a regular spring and autumn visitor. In autumn it arrives in comparatively small numbers during the early part of September. The first arrivals are nearly always adults in full winter-plumage; the immature birds follow a week or so later. In spring this species makes its appearance in far greater numbers about the middle of March. The first arrivals are invariably old males in full breeding-plumage and are followed later by females and younger birds. The migration lasts well into April.

20. Ruticilla semirufa (Hempr. & Ehr.).

Ruticilla semirufa Shelley, p. 84.

I have not personally met with this species up to the present time, but have the skin of an adult male shot by Mr. A. L. Butler, near Giza, on February 16th, 1901. Capt. Flower, who was with Mr. Butler when this example was obtained, informs me that there were several Redstarts about that day.

Doubtless they all belonged to this species, as it was at least a month too early for the arrival of the Common Redstart. Although this example very closely resembles specimens of *R. rufiventris* from India in the British Museum, I have thought it advisable to provisionally place it under the name given above, as it would seem that the present form is the more likely to occur in Egypt.

21. RUTICILLA TITYS (Scop.).

Ruticilla titys Shelley, p. 83.

The Black Redstart is a winter visitor in small numbers to the Giza Province.

22. CYANECULA SUECICA SUECICA.

Cyanecula suecica, Shelley, p. 85.

The Red-spotted Bluethroat is a regular winter visitor to Giza Province. As regards its plumage and habits I have nothing to add to my former remarks ('Ibis,' 1908, pp. 492–3).

23. CYANECULA SUECICA LEUCOCYANA C. L. Brehm.

Cyanecula wolfi Dresser, Man. Pal. Birds, p. 61.

The White-spotted Bluethroat is a winter visitor to Giza, though in much smaller numbers than the typical form.

I use the name *leucocyana* for this form, as the form or variety with an entirely unspotted blue gorget has been called *wolfi*; and although the former name may not be in *strict* accordance with the laws of priority, it seems better not to make "confusion worse confounded."

Of the entirely unspotted form I can say nothing. I have never obtained or seen a specimen in Egypt up to the present time.

24. ERITHACUS RUBECULA RUBECULA.

Erithacus rubecula Shelley, p. 87.

This form of the "Robin" is of regular occurrence during the winter months. In some years it appears to be more numerous than in others, but this may be on account of its habits. The Redbreasts met with here are comparatively shy, and in this respect may be compared to the Bluethroats. The song is often heard during the winter.

All the Redbreasts that I have at present examined from Giza belong to the pale-breasted greyish-backed form, which differs considerably from the British *E. rubecula melophilus*.

25. Daulias luscinia (Linn.).

Philomela luscinia Shelley, p. 88.

Nightingales begin to arrive in Giza towards the end of March, and for about a fortnight they abound. Great numbers frequent the Zoological Gardens, and I have seen as many as fifteen together close to the verandah of my house. Very soon after their arrival they commence to sing. In the autumn I have only met with this species on three occasions. I think that it is probable that the birds follow a different route on their way south from that taken on the passage northwards in spring. In addition to its song the Nightingale utters in spring a curious shrill squeak, unlike anything I have heard in England.

26. Daulias philomela (Bechst.).

Philomela major Shelley, p. 88.

I have only twice met with the "Sprosser" Nightingale in Egypt. On May 5th, 1907, I watched an example perched on a wire fence in the Zoological Gardens, and on November 1st, 1908, I obtained a specimen at Giza. The latter example had both feet considerably swollen, and this probably had retarded its passage southward.

27. Sylvia cinerea Bechst.

Sylvia cinerea Shelley, p. 111.

The Whitethroat appears to be a spring and autumn visitor in very small numbers. I saw a few during April 1907 in the Zoological Gardens, and obtained an adult male on the 12th of that month. I also have an adult female shot by Capt. J. W. H. Seppings on the 17th of April, 1907, at Giza, where I shot another adult male in winter-plumage on September 24th, 1908.

28. Sylvia curruca (Linn.).

Sylvia curruca Shelley, p. 110.

The Lesser Whitethroat is one of the most abundant visitors during the spring and autumn migrations. I have frequently heard it singing during the autumn.

29. Sylvia subalpina Temm.

Sylvia subalpina Shelley, p. 109.

The Subalpine Warbler is a regular visitor in spring, though not in any great numbers. The only record of this species during the autumn is of one example which I saw on November 27th, 1906, in the Zoological Gardens.

30. Sylvia conspicillata Temm.

Sylvia conspicillata Shelley, p. 109.

Capt. Shelley inserts this species with "some hesitation," as he did not meet with it in Egypt. Dr. Walter Innes obtained it in the Wadi Hof in the Province of Giza, and in the same place I have found it in February and December 1908.

31. Sylvia melanocephala Gm.

Curruca melanocephala Shelley, p. 107.

I have occasionally met with this species in spring and winter in the Zoological Gardens, but have as yet procured no specimens.

32. [Sylvia momus.

On March 14th, 1907, I watched a bird, which I feel sure was Bowman's Warbler, in my garden, but was unable to obtain it. This species is not mentioned by Capt. Shelley.]

33. Sylvia orphea Temm.

Curruca orphea Shelley, p. 104.

Two birds which I fancy were Orphean Warblers frequented the Zoological Gardens during November 1906.

I have no specimens of the species from Egypt, and at present agree with Capt. Shelley that it is of rare occurrence in that country.

34. Sylvia rueppelli Temm.

Curruca rueppellii Shelley, p. 106.

Rüppell's Warbler is a common visitor during the spring migration. It makes its appearance during the last days of March. I have only one record for the autumn—an adult female, which I shot near Giza on August 21st, 1907. I believe this species to have but one moult in the year, namely, in autumn.

35. Sylvia atricapilla (Linn.).
Curruca atricapilla Shelley, p. 105.

The Blackcap arrives in September, and is one of the few Warblers that spend the winter in the Zoological Gardens. I have frequently heard it singing from November onwards till April, when it takes its departure. This bird moults in autumn, and undoubtedly some individuals moult again completely in spring; I fancy, however, that these are young birds of the previous year. The same remarks as regards moult apply to the Lesser Whitethroat (*Sylvia curruca*).

36. Sylvia hortensis (Gm.).
Curruca hortensis Shelley, p. 104.

I have once or twice seen Garden-Warblers in the Giza Zoological Gardens during the autumn migration, but have no specimens from Egypt.

37. Aëdon galactodes (Temm.).
Aëdon galactodes Shelley, p. 85.

The first Rufous Warblers make their appearance in March. The earliest date on which I have seen one is on the 17th, but the main body do not arrive till April, from which month onward, until they take their departure in September, they are abundant.

38. Phylloscopus bonellii (Vieill.).
Phyllopneuste bonellii Shelley, p. 101.

Bonelli's Warbler is a regular visitor in large numbers during the spring migration, and again in much smaller numbers during the autumn movement southward.

39. Phylloscopus sibilatrix (Bechst.).
Phyllopneuste sylvicola Shelley, p. 101.

The Wood-Wren appears to be a regular visitor in small numbers during the spring migration. At present I have only met with it in my garden, where during the month of April in 1907 and 1908 a pair or two frequented a mulberry-tree for several days.

40. PHYLLOSCOPUS TROCHILUS (Linn.).

Phyllopneuste trochilus Shelley, p. 103.

The Willow-Wren arrives in September, but only remains a short time, its winter-quarters evidently being further south. Very few reappear during the spring migration in March and April.

I have not yet met with the northern subspecies *P. trochilus eversmanni* (Bp.).

41. PHYLLOSCOPUS RUFUS RUFUS.

Phyllopneuste rufa Shelley, p. 102.

The Chiffchaff arrives during September and spends the winter in Giza. I have heard it in song in November, but the majority do not begin singing before February *. By the end of April all have taken their departure.

Some Chiffchaffs have a moult of the contour feathers in spring, but I have not as yet been able to ascertain whether this is restricted to young birds of the previous year or not.

The first arrivals in autumn of this species are usually adult birds in full winter plumage.

42. PHYLLOSCOPUS RUFUS, subsp. ?

? *Phylloscopus collybita abietina* Hartert, Vög. d. pal. Fauna, Heft iv. p. 503.

This "northern" form of the Chiffchaff differs from the typical form in its slightly larger size and much whiter under parts; in this respect it stands in the same relation to the typical bird as the Northern Willow-Wren (*P. trochilus eversmanni*) does to the Common Willow-Wren (*P. trochilus trochilus*). This subspecies arrives here in October and remains till March. My attention was first drawn to the bird by its extraordinary call-note, which can only be described as resembling the "cheep" of a very young chicken in distress; by this it may be easily distinguished from the typical Chiffchaff, and so loud is the note that the bird makes its presence known at some distance. All those that I have met with seem much shyer than the typical form, and consequently are much more difficult to obtain. They are winter residents here, and are smaller and darker than typical specimens.

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* After the *autumn* moult the Chiffchaff and many other Warblers may be heard in song, but this seems to be restricted to adult birds.

43. SCOTOCERCA INQUIETA (Cretzsch.). (Plate IV.)

Malurus inquietus Cretzschmar, in Rüppell's Atlas.

Curruca fumula Hemp. & Ehrenb. Symb. Phys. fol. bb, 1833.

Drymœca eremita Tristram, Ibis, 1867, p. 76.

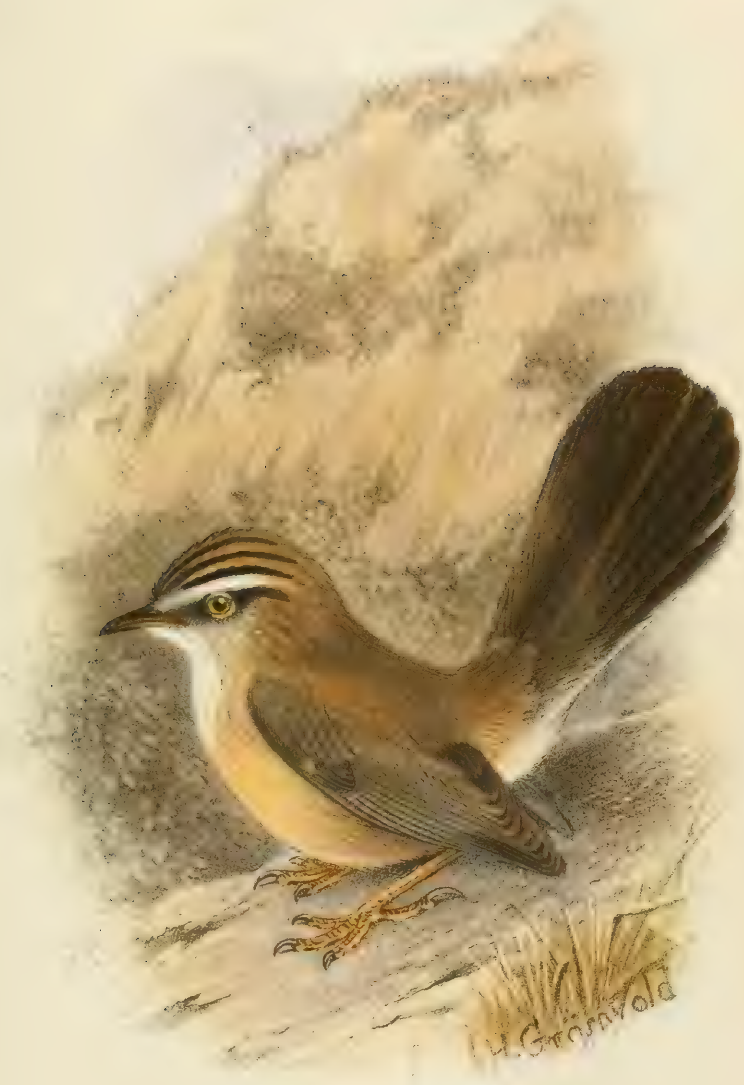
Drymœca inquieta Heuglin, Ornith. Nordost-Africa's, vol. i. p. 244.

Scotocerca inquieta innesi Nicoll, Bull. B. O. C. vol. xxi. p. 98 (May 1908).

The Egyptian examples of *Scotocerca* appear to be identical with birds from the typical locality—Sinai, though they are quite distinct from Asiatic specimens. The latter are greyer above and lack the white superciliary stripe of the typical form. The *Scotocerca inquieta innesi* which I described from Egypt must therefore be referred to the typical form. When comparing my examples at the British Museum I—seeing only Asiatic specimens and finding that these were labelled "*Scotocerca inquieta*," and that both Dresser (Man. Pal. Birds, p. 142) and Sharpe ('Hand-list,' vol. iv. p. 234) gave the range of *Scotocerca inquieta* (Cretzsch.) as from Arabia Petræa to N.W. Punjaub and N.W. of the Indus—ventured to describe the Egyptian bird as a new form. Dr. Hartert subsequently pointed out my mistake to me and I take this opportunity of correcting it.

The typical *Scotocerca inquieta* is found in Egypt near Cairo, and in Palestine and Sinai, the Persian and Transcaspian birds belonging to distinctly different subspecies.

At present I only know of one locality in Egypt where this "Scrub-Warbler" may be met with, *i. e.* the Wadi Hof, near Helwan in the Giza Province. This Wadi Hof is a



West, Newman imp.

SCOTOCERCA INQUIETA.

rocky valley in the hills. I believe the bird to be a resident in this locality, as I have met with it and obtained examples in February, August, and December. It is extremely wild and shy for a small bird, and specimens are obtained with considerable difficulty. It seldom, if ever, takes refuge in a bush, but flies ahead, occasionally settling on the top of a rock. When hard pressed it invariably either flutters up the steep sides of the valley or flies away out of sight. The call-note of this bird is a shrill chirp and the song a short trill. It is not included in Shelley's 'Birds of Egypt.'

44. Drymœca gracilis deltæ (Rich.).

Drymœca gracilis Shelley, p. 98.

The Graceful Wren-Warbler is resident in the Giza Province. Numbers nest in the Zoological Gardens.

45. Cisticola cisticola (Temm.).

Cisticola schœnicola Shelley, p. 97.

The Fan-tailed Warbler is abundant and resident in the province.

[46. Hypolais polyglotta.

Phyllopneuste hippolais Shelley, p. 103.

Capt. Shelley did not meet with the Melodious Tree-Warbler in Egypt, and I have no positive record of its occurrence; but I fancy that I have seen it once in September and once in March in the Giza Zoological Gardens.]

47. Hypolais pallida (Hempr. & Ehr.).

Hypolais elæica Shelley, p. 100.

The Olivaceous Tree-Warbler is the most abundant of our breeding birds. The first individuals appear towards the end of March and at once begin singing. The song at first resembles that of the Reed-Warbler (*Acrocephalus streperus*), but after the birds have been here a few weeks their notes become richer. I believe the Olivaceous Warbler to have two moults in the year. The nests are placed in a variety of situations, usually in tall clumps of flowering plants or shrubs, but I have found several in the lower branches of fir-trees and one in a branch of *Bougainvillia* overhanging water. By the end of October all the birds have taken their departure. I have eleven specimens of this species from Giza; in all of them the tarsi and toes are lead-coloured with a tinge of brown.

48. LOCUSTELLA NÆVIA (Bodd.).

On September 28th, 1907, I saw a Grasshopper-Warbler in the Zoological Gardens. I have no other record of the species from Giza or Egypt. Capt. Shelley does not mention it.

49. ACROCEPHALUS PHRAGMITIS (Bechst.).

Calamodyta schœnobænus Shelley, p. 91.

During the autumn migration (September 1908) I found great numbers of Sedge-Warblers in the cotton-fields near Giza, and obtained a pair of adults and one immature example.

50. ACROCEPHALUS MELANOPOGON (Temm.).

Calamodyta melanopogon Shelley, p. 93.

I saw one example of this species outside the Zoological Gardens on August 23rd, 1907. This is the only occasion on which I have seen it in the Province of Giza.

Some six years ago Dr. P. L. Sclater shewed me the skin of an example which he had shot close to the same place.

51. ACROCEPHALUS AQUATICUS (Gm.).

Calamodyta aquatica Shelley, p. 92.

I saw an undoubted Aquatic Warbler near Giza, in a patch of cotton, on November 17th, 1908.

52. ACROCEPHALUS STENTOREUS (Hempr. & Ehr.).

Acrocephalus stentoreus Shelley, p. 95.

The Clamorous Great Reed-Warbler is probably a resident in Egypt. I have only one record from the Province of Giza. I saw an example in the Gardens of the Government Aquarium in the autumn of 1907.

53. ACROCEPHALUS TURDOÏDES (Meyer).

Acrocephalus turdoides Shelley, p. 96.

Capt. Shelley did not meet with this Great Reed-Warbler in Egypt. I have an adult male which I shot in the Province of Giza on August 25th, 1907. On the same day I saw numbers of Red-backed Shrikes (*Lanius collurio*) and imagine that the Reed-Warbler had arrived from Europe in their company. It is certainly only a visitor to Egypt on migration, its place being taken in this country by *A. stentoreus.* The present species may be at once distinguished from the resident bird by its deeper and stronger bill.

54. ACROCEPHALUS STREPERUS (Vieill.).

Calamoherpe arundinacea Shelley, p. 94.

The only record that I have of this species in the Giza Province is of two individuals seen on August 23rd, 1907, by myself just outside the walls of the Zoological Gardens, in a bed of bulrushes.

55. SITTA sp.

On February 10th, 1903, a Nuthatch was seen by Capt. Flower in the Zoological Gardens.

56. MOTACILLA BOARULA BOARULA.

Motacilla sulphurea Shelley, p. 127.

Motacilla boarula boarula Hartert, Vög. d. pal. Fauna, Heft iii. p. 298.

The European Grey Wagtail arrives in Giza in the autumn and remains until the following spring. I have never seen it in large numbers. A pair or two may be met with daily during the winter in the Zoological Gardens. I have seen examples with the black throats of summer plumage in March.

57. MOTACILLA ALBA Linn.

Motacilla alba Shelley, p. 126.

The White Wagtail arrives in Giza during the beginning of October, and the first to arrive are nearly always adult birds in full winter plumage. A very short time elapses before the immature birds put in an appearance, and from that time onwards until April this species is most abundant. Large numbers frequent the Zoological Gardens, and I have frequently seen them singing while perched on the tops of some of the cages and buildings. This species has a moult of the contour feathers in spring, but I do not think that the quills are shed then. Capt. Jenkinson informs me that in March 1908 he saw an almost pure white example near Mazghouna in the Giza Province.

58. MOTACILLA CITREOLA Pall.

I include this Wagtail among the birds of Giza on the strength of a single immature example shot by Capt. J. W. H. Seppings, not far from the Pyramids, on September 18th, 1907, and now in my collection. I have matched this example with specimens in the British Museum. It was doubtless a straggler, as the winter-quarters of the species are much further to the eastward. It is not unlikely, however, that wanderers should occasionally reach Egypt, as specimens have been obtained as far west as Heligoland and in Italy.

59. MOTACILLA FLAVA FLAVA.

Motacilla flava Shelley, p. 128.

The Blue-headed Wagtail is a common visitor during the autumn and spring migrations. I have several specimens shot in September at Giza.

[60. MOTACILLA FLAVA BOREALIS.

Though Capt. Shelley does not mention this form as occurring in Egypt, and though I have up to the present time obtained no examples here, I include it amongst the birds of Giza, as there can be no doubt of its occurrence on migration. Hartert (Vög. d. pal. Fauna, Heft iii. p. 292) mentions it as occurring in Egypt, and I have a skin of an adult male procured by Mr. A. L. Butler in Khartoum in autumn. Up to the present time I have had little opportunity of collecting migrating Wagtails in Egypt, and though thousands pass through the Province of Giza, even within a mile of the Zoological Gardens, I have seldom seen them actually inside the walls.]

61. MOTACILLA FLAVA MELANOCEPHALA.

Motacilla melanocephala Shelley, p. 130.

The Black-headed Wagtail is a regular spring and autumn visitor on migration. Great numbers pass during both migrations.

Adult males in autumn plumage have the greater part of the black head obscured by the greenish edges of the feathers. One-year-old males in spring are almost exactly similar in appearance.

I have not yet met with *M. f. melanogrisea* (Hom.).

62. Motacilla flava pygmæa (Brehm).

Budytes pygmæus A. E. Brehm, J. f. O. 1854, p. 74.

? *Budytes cinereocapilla* Shelley, p. 129.

Motacilla flava pygmæa Nicoll, Ibis, 1908, p. 495.

This small form, which appears to be nearest to *M. f. cinereocapilla*, is, I believe, a resident in the Giza Province. I have seen specimens obtained from September to May; those obtained during the latter month were feeding young.

Capt. Shelley remarks on the difference of measurement between his "*Budytes cinereocapilla*" and *B. flava* from Egypt, and for this reason I believe that his specimens of *M. cinereocapilla* are referable to the present form. I have not yet obtained the true *Motacilla flava cinereocapilla* in Egypt.

This bird does not appear to have a spring moult, all examples that I have obtained in spring are in much worn plumage.

63. Anthus trivialis (Linn.).

Anthus plumatus Shelley, p. 130.

The Tree-Pipit is a regular visitor during both spring and autumn migrations.

64. Anthus pratensis (Linn.).

Anthus pratensis Shelley, p. 131.

The Meadow-Pipit appears to be a regular winter visitor in some numbers. It arrives in autumn and remains till the spring.

65. Anthus cervinus (Pall.).

Anthus cervinus Shelley, p. 131.

The Red-throated Pipit winters in very large numbers in the Province. As regards the habits and plumages of this species I have nothing to add to my former remarks ('Ibis,' 1908, pp. 495–6).

66. ANTHUS SPIPOLETTA COUTELLII.

Anthus spinolettus Shelley, p. 132.

Anthus spinoletta coutellii Hartert, Vög. d. pal. Fauna, Heft iii. p. 281.

This form of the Water-Pipit is an abundant winter visitor to the Province. It arrives in autumn and remains till April.

67. ANTHUS CAMPESTRIS (Linn.).

Anthus campestris Shelley, p. 134.

The Tawny Pipit appears to be resident in the Province. I have never found the nest, but this is no doubt owing to lack of opportunity. I have obtained immature examples in first plumage in autumn and adults in winter and spring.

68. ANTHUS RICHARDI Vieill.

The only example that I know to have been obtained in the Province is an adult male shot by myself on November 17th, 1908, near Giza. For the recorded occurrences of this species in Egypt, *cf.* 'Ibis,' 1908, p. 496.

[To be continued.]

XII.—*A Note on* Molpastes magrathi *Whitehead.*

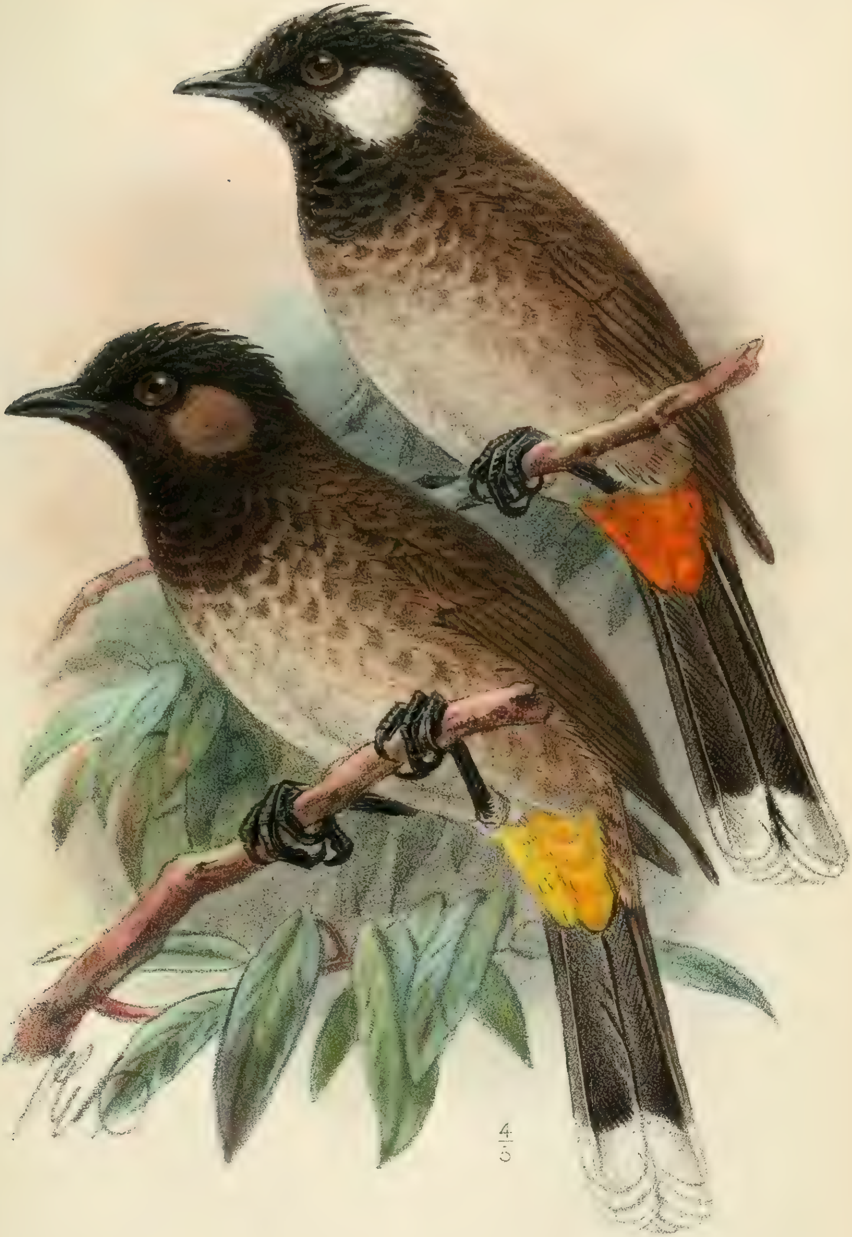
By R. BOWDLER SHARPE, LL.D., F.Z.S., M.B.O.U.

(Plates V. & VI.)

THE Editors have asked me to write a few words on the curious species of Bulbul which Lieut. C. H. T. Whitehead has lately named after Major H. A. F. Magrath (see Whitehead, Bull. B. O. C. xxi. p. 48 (1908); id. Ibis, 1909, p. 114).

Thanks to Lieut. Whitehead and Major Magrath, the British Museum contains an ample series of specimens of the Bulbuls which have served for the interesting essay they have written on these forms.

Ibis. 1909. Pl. V.



West, Newman imp.

MOLPASTES MAGRATHI.

MOLPASTES INTERMEDIUS. (Plate VI.)

Molpastes intermedius (A. Hay); Oates, Faun. Brit. Ind., Birds, i. p. 272 (1889); Whitehead, Ibis, 1909, p. 111.

The three specimens from Kohat mentioned by Lieut. Whitehead (Nos. 634, 733, 735) appear to me to be certainly *M. intermedius.* They differ slightly *inter se,* the male having brown stripes on the lower flanks, while the others (male and female) are uniform ashy grey on the latter; all have the dark brown ear-coverts of typical *M. intermedius.* This species probably interbreeds with *M. leucogenys,* according to Major Magrath, and Mr. Donald has twice seen the two forms pairing together.

I have again examined the series which is enumerated by Lieut. Whitehead (above, p. 112), and I confess that I have never seen a more wonderful example of the hybridizing of birds in a wild state. There can be no question that all these specimens contain a certain amount of admixture, one of the other. Typical *M. leucogenys* has the chest uniform like *M. leucotis* (Pl. VI.), and both have lemon-yellow under tail-coverts and pure white ear-coverts, whereas *M. intermedius* has brown ear-coverts and crimson under tail-coverts, as well as a decidedly long crest. When the hybrids have a mottled brown chest (*M. intermedius*), the ear-coverts generally follow the brown ear-coverts of *M. intermedius,* and the crest is also long. The under tail-coverts vary from orange to crimson. There is, however, no rule as regards colour, and, as Lieut. Whitehead says, "some are more like *M. intermedius,* and others more like *M. leucogenys* or *M. leucotis.*"

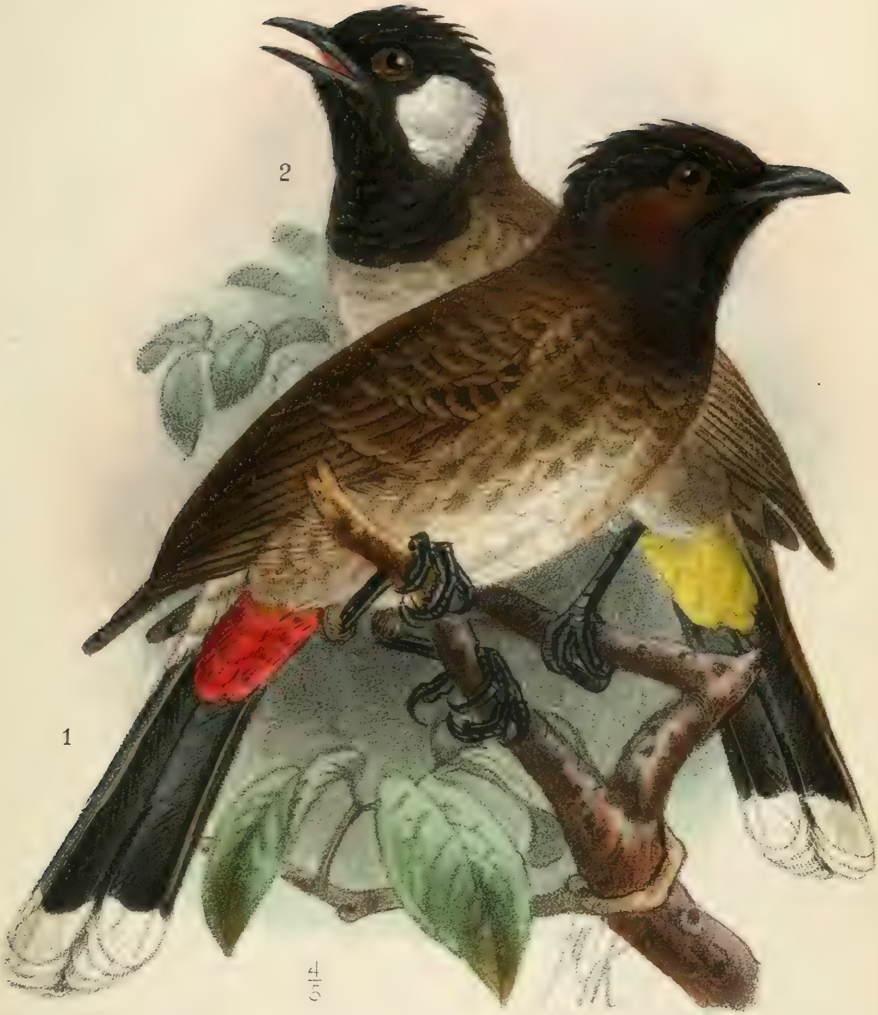
I quite agree with what Lieut. Whitehead and Major Magrath say about *M. leucogenys,* of which the breast varies in colour, some birds being more ashy grey than others, but the under tail-coverts are always lemon-yellow.

Sometimes there is some brown mottling on the chest, but as a rule this is uniform, and the ear-coverts are pure white, very few having any shade of dusky. Major Magrath observes on one of these specimens: "Consorts with *M. leucotis*"; and adds that it seems likely that the two species interbreed, though he has not actually observed a fertile cross. The series collected by my two friends certainly points to hybridizing, the ear-coverts when sullied with brown being accompanied by a browner and longer crest (*M. leucogenys*), while pure white ear-coverts accompany a shorter and blacker crest (*M. leucotis*).

Molpastes magrathi (Pl. V.) has deep orange-coloured under tail-coverts, sometimes slightly inclining to crimson. The chest varies from uniform ashy grey to grey with more or less black mottling, the feathers being black in the centre, with ashy margins. I agree with Lieut. Whitehead that, on the present evidence, it is impossible to pronounce these birds to be hybrids. They could only be hybrids between *M. leucotis* and *M. intermedius*, but the latter does not occur in Bannu.

XIII.—*Notes on some Birds collected during a Cruise in the Caribbean Sea.* By Percy R. Lowe, M.B.O.U.

The following paper is chiefly based on a collection of birds which I made during the winter of 1907–1908, while cruising with Sir Frederic Johnstone in his yacht 'Zenaïda.' It includes, among others, notes on the species met with in some little-known islands off the north coast of Venezuela. Thanks also to Sir Frederic Johnstone, I have previously been able to describe the birds of Margarita and Blanquilla Islands, while some years ago Dr. Hartert described the birds of Curaçao, Bonaire, and Aruba ('Ibis,' 1893, p. 318); so that my present notes on the birds collected and seen in the island groups of Los Testigos and Los Hermanos make another step towards completing the account of the birds of this interesting chain of islands—the true Leeward Islands. In an endeavour to make them still more complete, I have added a list of the birds which I met with in the Cariaco Peninsula; for not only must the geological formation of this interesting strip of land be referred to the same primitive period as is represented in Margarita, Blanquilla, Ibis. 1909. Pl. VI.



West, Newman imp.

1. MOLPASTES INTERMEDIUS.
2. MOLPASTES LEUCOTIS.

Los Hermanos, and Los Testigos Islands (and, so far as I am aware, in the Curaçao Group also), but the flora and avifauna present the same general characteristics and differ in an appreciable way from those of the mainland as a whole.

To one steaming up the Gulf of Cariaco nothing indeed could be much more striking than the strange contrast which is exhibited on the one hand by the Peninsula, with its arid, desolate, and schistose rocks only scantily clothed with cactus and mimosa scrub, and on the other by range after range of tall mountains, luxuriantly forest-clad, which mark the Secondary limestone formations of the mainland.

We have, then, off the coast of Venezuela a chain of islands which, together with the Peninsula of Cariaco, represent the remains of what in all probability in a remote Primary age was one continuous and large tract of land, and exhibit an avifauna which in general can be distinguished from that of the mainland. In an old French atlas this chain of islands is designated by the name "Les Isles sous le vent." They are, indeed, the real Leeward Islands of the old discoverers, and I am at a loss to account for the reason that the name has been applied to another and more northern group.

My paper also includes notes on the birds of Swan Island and the Grand Cayman, both of which lie in the western end of the Caribbean Sea. I have added a few notes on some of the species met with in the islands of St. Vincent, Grenada, and Barbados. We have previously visited these islands on one or two occasions, but the birds which inhabit them are in general so well known that I confine myself to a few remarks which may possibly prove of interest.

I take the islands in the order in which we visited them.

I once more have to express my great indebtedness to Dr. Bowdler Sharpe, who has allowed me to work out my collection at the British Museum and given me much kind assistance.

BARBADOS.

Leaving Monte Carlo on Nov. 11th, 1907, we arrived at Barbados on Dec. 4th and left that island on Dec. 12th. During this and a previous visit I obtained specimens of all the resident birds on the island except the *Vireo*. They are so well known that I merely add a note or two on one or two forms which seem to call for remark.

ZENAÏDA AURITA Temm. & Knip.

This very handsome Dove is fairly generally distributed over the island, but is nowhere very abundant except in the hilly "Scotland" district. I shot a few examples, and it seems to be distinguishable by well-marked differences from other forms of this genus found in the Lesser Antilles.

CHAMÆPELIA ANTILLARUM.

Chamæpelia antillarum Lowe, Bull. B. O. C. vol. xxi. p. 109 (1908).

This Ground-Dove, which is also found on the islands of St. Vincent and Grenada, has the base of the bill olive-brown, with no trace of either yellow, orange, or crimson, except that in some specimens, in the perfectly fresh state, there is to be seen the thinnest possible line of yellow along the upper edge of the mandible. Its nearest ally is *C. bermudiana* Bangs; but the bill of that bird is almost uniformly black, while the edges of the mandibles have a thin line of crimson. *C. antillarum* is also larger and much richer in coloration than examples from Bermuda.

I have twenty specimens in my collection from the three islands. How much further north along the Antillean chain this form extends, I have had no opportunity of discovering.

ELÆNIA MARTINICA BARBADENSIS.

Elainea barbadensis Cory, Auk, v. 1888, p. 47.

Elænia martinica martinica Ridgw. Birds North and Middle Amer. pt. iv. p. 426.

Elainea martinica Nicoll, Ibis, 1904, pp. 558.

Elainea martinica Berlepsch, Proc. Fourth Intern. Orn. Congress, 1907, p. 394.

I have three specimens of this Tyrant which I obtained at Barbados that undoubtedly differ from examples of true *E. martinica,* and having also examined two birds taken by Mr. Nicoll on the same island, one of which exactly agrees with mine, while the other is lighter in coloration and is apparently younger, I am unable to agree with him in thinking that this form should be united to that found in St. Vincent, St. Lucia, Martinique, Dominica, and Guadaloupe (true *E. martinica*). The four apparently *fully* adult birds from Barbados are both larger and darker in coloration above and below than examples from these islands, a large series of which I have examined, and my only hesitation has been whether they best deserve specific or subspecific rank.

TYRANNUS DOMINICENSIS VORAX.

Tyrannus vorax Vieillot, Nouv. Dict. d'Hist. Nat. xxxv. 1819, p. 90.

Tyrannus dominicensis vorax Ridgw. Birds North and Middle Amer. pt. iv. p. 710.

Tyrannus rostratus Sclater, Ibis, 1864, p. 87.

Three males and one female.

The bills of these specimens from Barbados, as well as of three others which I shot in Grenada, are somewhat larger than in typical specimens of *T. dominicensis* (Gmelin), and agree in other respects with descriptions of this form, which is found in the more southern Antilles. The difference in size between the two birds is, however, slight, and the bills also vary a good deal in length in examples from the same island; yet no doubt if a sufficiently large series were examined the distinction between the two forms would be more obvious.

EUETHIA BICOLOR MARCHII.

Euethia bicolor marchii (Baird), Proc. Ac. Nat. Sci. Philad. 1863, p. 297; Ridgw. Birds North and Middle Amer. pt. i. p. 541.

Euethia bicolor Nicoll, Ibis, 1904, p. 557.

I shot a series of fourteen male examples of this Finch, which I consider to be undoubtedly a good and very constant subspecies and similar to the bird found in Jamaica, the black of the under parts in adult birds ending abruptly on the lower part of the chest or in the middle of the breast.

Six males which I obtained on the islands of Grenada and St. Vincent agree exactly with those from Barbados and must be undoubtedly referred to the same subspecies.

ISLAND OF ST. VINCENT.

Leaving Barbados on Dec. 12th, we arrived here the same day and stayed until Dec. 19th.

CHRYSOTIS GUILDINGI (Vig.).

This magnificent Parrot still occurs in sufficient numbers on the island to make its preservation a matter of certainty if proper care is exercised. Several large flocks are known to exist, and I was informed by the Revenue Officer at Chateau-Belair that they regularly came down to his garden among the hills to feed. The effect of the recent eruption must have been moderate in regard to its extinction. Strangely enough, although a large number of birds are strictly preserved on the island, this species remains unprotected.

MYIADESTES SIBILANS Lawr. "Souffrière Bird."

This bird was also reported to have been wiped out by the eruption. I was told, however, that for days after that calamity it was both seen and heard in numbers round Chateau-Belair and that it then gradually disappeared, having apparently gone back to the mountains. This species is not nearly so rare, I believe, as some would have us suppose. It lives in the "high woods" and is very retiring and "skulking" in its habits, so, as no one dreams of climbing to the densely-wooded mountain-tops without some very good reason, very little is known about it.

In times gone by the Negroes, or rather the Caribs, had a superstitious dread of the bird, and did not dream of killing it. It used to be very common in and around the Souffrière and there never could have been such difficulty in obtaining specimens as one might gather from Mr. Ober's accounts.

Cœreba saccharina (Lawr.).

This bird seems to be in much greater danger of extinction than either of the previous two forms. I have only seen one specimen on the island of St. Vincent, where it appears to have been entirely ousted by *C. atrata* (Lawr.), a peculiar black form of this genus. It is becoming very rare, too, on Grenada. On our last visit to that island we did not see a single example, while on former occasions I obtained four. Mr. Austin Clark states, however, that it is common on the Grenadines.

Mr. Ridgway has suggested (Proc. U.S. Nat. Mus. vol. viii. 1885, p. 28) that the two black forms of this genus found in St. Vincent and Grenada may prove to be merely phases of the normally coloured birds (*C. saccharina*) inhabiting the same island; but there does not seem to be very much evidence in support of his contention.

I have lately found another black form well established on the islands of Los Testigos, Venezuela (see below), where *C. saccharina* is conspicuous by its absence. If this black form is also merely a melanistic phase, as Mr. Ridgway would have it, it must be a phase of *C. luteola*; but it is strange that we do not find black phases on the mainland or in any other of the Antillean or Caribbean islands. *C. luteola* is the form which occurs on Margarita.

Cotile riparia (Linn.).

A number of these Bank-Swallows were "hawking" about in pursuit of insects on the top of the Souffrière, some little way below the crater, but a long way above the zone of present vegetation. Unfortunately, in my ascent of the volcano I had left my collecting-gun behind where the vegetation ceased, and so could not procure a specimen for identification. The birds were flying very low, skimming backwards and forwards over the ground and passing continually within a few feet of us, so that I was able to get a perfectly good view of them. My notes, taken at the time, state that they "were of a light sandy colour above, with lighter rumps and white under parts." So far as I am aware, this bird has not been previously recorded from the Lesser Antilles.

CHÆTURA BRACHYURA (Jard.).

On the strength of Mr. Cory's remarks ('Birds of West Indies,' 1889, p. 295), I have referred my only specimen (a female), which I procured from a large flock near Kingstown, to this species; but having compared it with others in the British Museum, I am unable to detect any difference between it and specimens of *C. poliura* Temm.

EUETHIA BICOLOR MARCHII (Baird).

The St. Vincent Finch of this genus seems undoubtedly to be referable to this subspecies and to agree in every respect with examples from Barbados and Grenada. Having now obtained for myself a series of birds on the spot, I must correct my remarks in 'The Ibis' (1907, p. 122) with regard to the St. Vincent form, which were made on the strength of an examination of an insufficient number of specimens from that island in the British Museum collection. This bird was breeding in December.

URUBITINGA ANTHRACINA (Licht.).

I saw a pair of these black Hawks near the Botanical Gardens at Kingstown, and I was informed at Chateau-Belair that they are often seen there.

ANOUS STOLIDUS (Linn.).

Breeds in large quantities on the shore to the north of Chateau-Belair.

ISLAND OF GRENADA.

We arrived at this island on Dec. 19th, and after a stav of a week left for Tobago.

ELÆNIA FLAVOGASTER (GRENADENSIS?).

Pipra flavogaster Thunberg, Mém. Acad. Imp. St. Pétersb. viii. 1822, p. 429; Lönnberg, Ibis, 1903, pp. 241, 242.

Elænia flavogaster subpagana Berlepsch, Proc. Fourth Intern. Ornith. Congress, 1907, p. 384.

Elænia subpagana Sclater & Salvin, Ibis, 1860, p. 36.

Elænia martinica subpagana Ridgw. Birds of North and Middle Amer. pt. iv. p. 429.

Elainia pagana Nicoll, Ibis, 1904, p. 566.

Two specimens which I obtained on Grenada and a large series which I have examined in the British Museum collection are undoubtedly distinct from birds found in St. Vincent, St. Lucia, Dominica, Martinique, and Guadaloupe (typical *E. martinica*). They very closely resemble, if not actually identical with, the form found on the neighbouring mainland (Venezuela and Colombia), Trinidad and Tobago. If, therefore, we follow Count Berlepsch's recent proposal, and accept Thunberg's original name *flavogaster* for the mainland bird, instead of *martinica* (from which purely Antillean group both the mainland and Grenada bird are quite distinct), then this form becomes *E. flavogaster*.

If, on the other hand, the Grenada bird is recognised as differing from the mainland form and as being worthy of subspecific rank, another name than *subpagana* must be found for it; for this name is referable to a race which ranges further to the west through Central America, from South Mexico to Panama, and it is hardly possible that those from Grenada and the Grenadines can be identical with it.

We should thus have *E. flavogaster* representing the typical bird from Colombia, Venezuela, and Brazil, while *E. flavogaster subpagana* would represent the more western race; and if the Grenada and Grenadine bird is to be distinguished by a name, I would suggest *E. flavogaster grenadensis*. By this arrangement the name *martinica* is reserved for the purely Antillean races, which are easily distinguished from the mainland forms.

MYIARCHUS OBERI NUGATOR.

Myiarchus oberi nugator Riley, Smithson. Misc. Coll. 1904, p. 275.

Specimens of this Tyrant which I obtained on Grenada and from St. Vincent, and others which I have examined in the British Museum collection, can be distinguished from examples found in Dominica and St. Lucia—*M. oberi* Lawr. They are also easily distinguished, both in size (larger) and coloration, from examples of *M. tyrannulus* Müller.

MOLOTHRUS ATRONITENS (Cabanis).

At the southern end of Grenada this beautiful glossy Cow-bird is rapidly establishing itself. I saw numbers flying about with flocks of *Quiscalus luminosus*, and shot four specimens. The bird has a most charming song—a series of low musical flute-like notes of extraordinary sweetness. I listened to one for some time as it sang *on the ground* beneath a mangrove bush.

LOS TESTIGOS ISLANDS.

Leaving Trinidad on the afternoon of Dec. 31st, we arrived in the early morning of Jan. 1st, 1908, at this group of little-known islands and after some trouble found a very snug and safe anchorage in an almost land-locked position under the lee of the largest of them, which is called Testigo Grande (Great Witness) or Goat Island.

These islands, six or seven in number, lie off the north coast of Venezuela. They are forty-three miles from the mainland, eighty-five miles from Grenada, and fifty-one miles north-east (roughly) of Margarita.

Testigo Grande is of greater extent than is given in the sailing directions. We put its length at from three to three and a half miles, but its shape is very irregular, and in the short time at our disposal we had no opportunity of taking more accurate measurements. Its greatest height is (roughly) 400 to 500 feet.

Scattered round it are other smaller islands or rocky fallarones. The group is periodically inhabited by fishermen, who go there from January to April, but we were informed that one family now lived there all the year.

Testigo Grande is thickly wooded and covered with very varied vegetation, in spite of the waterless condition in which we found it. Many of the trees attain quite respectable proportions, and there seemed to me to be an unusual variety. Besides many that were unknown to me, I noticed Logwood, West-Indian "Birch," Guiaicum, Acacia, Tamarind, and Manchineel. Various kinds of Cactus grow on the lower slopes and on the smaller islets, and there is a great profusion of flowering bushes and even flowering plants. Wild cotton grows in abundance. Except for the few miserable huts erected by the fishermen, and a modest plot or so of cultivated ground in their immediate vicinity, these islands remain as they have existed through the ages. Geologically they consist of masses of a coarse-grained granite (hornblende), enormous fragments of which, much weathered, may be seen here and there amid the surrounding vegetation. On the weather side of one of the smaller islets this granite is overlaid by a layer of shaly rock. The general colour of the soil and exposed rocks in the lower parts of the island is deep ferruginous. I was much struck by the number of butterflies that we saw. Progress anywhere on the large island is laborious, owing to the thick bush and the excessive heat. I have no doubt that other land-birds besides those observed would be met with if a more extended search was made for them; and sea-birds probably nest here also, especially on the north side of the large island, where the shore is sandy. I have met with the Sooty Tern in great numbers in the near neighbourhood of these islands, but saw nothing of it on any of the fallarones.

Besides the few birds mentioned below as having been seen or shot, one or two unidentified Owls were seen, as well as a Buzzard (*Buteo latissimus*?) and a few Pelicans (*Pelecanus fuscus*). I have no doubt that *Margarops fuscatus* or some other Thrush would be found towards the higher levels of the largest of the islands, as it exists on the Los Hermanos group; but we had no time in the two days at our disposal to cover all the ground, having unfortunately lost much valuable time in visiting some of the smaller outlying islands.

Columba corensis Gmel.

We saw several Pigeons on Goat Island which were no doubt examples either of this species or of *C. leucocephala*, but we were unable to get near enough to shoot any.

CHAMÆPELIA PERPALLIDA.

Columbigallina passerina perpallida Hartert, Ibis, 1903, p. 304.

Three males and one female.

A fairly common bird wherever the scrub is scanty and the ground suitable. I shot other specimens, but had no time to prepare more skins. The colour of the bill at the base varies in both sexes from orange to yellow, according to age.

The under tail-coverts have very broad margins of white with only very narrow wedge-shaped centres of dusky; otherwise I do not think specimens of the Los Testigos Ground-Dove quite so pale as those I have obtained on other islands.

LEPTOPTILA sp.?

I shot an example of a Dove of this genus on one of the smaller islands, but unfortunately lost it in some thick cactus-scrub; I have no doubt, however, that it belonged to the species *verreauxi*, which I found very common on Margarita Island.

HÆMATOPUS PALLIATUS Temm.

One female.

I saw a pair of Oyster-catchers on the rocks at the south-east end of Testigo Grande, and shot one of them. Another bird, at the western end of Margarita Island, was so tame that it ran about on the beach within twenty yards of some fishermen's huts.

ARENARIA INTERPRES (Linn.).

One female.

Several flocks of Turnstones were seen along the western side of Testigo Grande, where the shore becomes more sandy and there is abundance of shell-fish. It is remarkable how admirably the colour of the upper parts matches with the rocks on which the birds are accustomed to settle. They were exceedingly tame, and several times when I approached within three or four yards of a small band they only flew to an adjacent boulder and immediately settled down close to the rock. In the act of settling their white under parts became for a moment visible, and then instantly the birds remained motionless, some of them crouching close to the rock, and as if by magic seeming to almost disappear under my eyes. Several times, after intentionally turning away, it was difficult to locate the birds on looking round again, although they were only twenty feet or less away.

LIMONITES MINUTILLA (Vieill.).

Limonites minutilla (Vieill.); Sharpe, Cat. B. Brit. Mus. xxiv. p. 548 (1896).

Common on the shores. I shot one example for identification.

ARDEA HERODIAS, Linn.

Ardea herodias Sharpe, Cat. B. Brit. Mus. xxvi. p. 80 (1898).

I saw several of these large blue Herons fishing on the islands, but did not shoot any. This bird seems to prefer rock-strewn shores to the banks of rivers and streams, and will fly enormous distances in order to feed on the abundance of shell-fish and other food which it finds there. In the Bermudas there is a regular annual migration from the mainland, and I have seen many individuals along the shores there. This entails a flight of close on six hundred miles across an open sea, without a landmark to guide the birds. The migration occurs in spring, and I was told by a naturalist on the island that later in the year they all disappear.

SULA SULA (Linn.).

This Gannet was present on the smaller islands of the group in large numbers, and was breeding. It invariably lays its eggs on the ground, and makes a more elaborate nest than *Sula cyanops,* lining a slight depression in the soil among the rocks with roots and pliant twigs. Either one or two eggs are laid. I have photographs of these birds on their nests taken within four feet of them.

On the second morning of our stay at the island we saw a flock of quite a thousand, flying in a dense and compact mass. They were evidently following a shoal of fish, which occasionally rose to the surface, and as they watched the fish below their movements appeared to be actuated by a single will or volition, so that they dipped or rose or inclined to the right or left as if at the word of command of a single individual. Through all their movements they kept the closest order, and when from time to time they dived the whole flock fell plumb to the water as one bird, the sea being lashed and churned to white foam over a very circumscribed area in a most remarkable manner.

A curious thing which we noticed was that occasionally the whole compact flock made a sort of feint at the water, and then with one accord turned again to regain their former level of flight, as if the shoal of fish had been sighted but the birds realised in the middle of their dive that their prey were too deep.

I have watched many thousands of Gannets of different species fishing, but have never seen them hunt together in this way before. As a rule, where numbers are fishing together, each bird acts independently; but this flock, which consisted entirely, so far as I could make out, of examples of *Sula sula*, acted in a unison as perfect as that exhibited by a flock of Starlings.

SULA PISCATOR (Linn.).

This Gannet was also breeding on the smaller islands of the group. It was not present in such numbers as *S. sula*. Examples of all three stages of plumage were noticed. Most of the nests belonged to individuals in the white-tailed and brown-bodied stage of plumage. Birds in the wholly brown stage do not breed, being apparently too young. Birds in the fully adult white plumage are, in comparison with birds in the middle stage of plumage, quite rare. This species invariably makes its nest in low trees, either mangrove or sea-grape.

FREGATA AQUILA (Linn.).

These birds were beginning to nest and were present in hundreds. I did not see a single example with a red gular sac during the two days we were at the Testigos, and I am inclined to think that this is only acquired by very old males. One of our officers told me that he had seen *one.* By far the greater number of birds hovering over the islands had the head black and the throat and thorax white, with a pectoral band of brownish not meeting in the middle line—that is to say, they were either young males or young females; a lesser number had the head and neck white (fully adult females).

CERYLE ALCYON (Linn.).

I saw several examples of this Kingfisher along the shores of the island. In my experience this bird seems to prefer salt to fresh water. There was no water in any of the watercourses on Testigo Grande when we visited the group. I have found this bird on Blanquilla Island, which is seventy miles from the mainland, and contains no streams, on Swan Island (ninety-eight miles from the coast), which is another streamless island, and again on the Cayman Islands. So far as my recollection goes, I have not met with it as a rule very far from the sea when exploring rivers, and its favourite resorts are the mangrove bushes which border their mouths, where the water is brackish or tidal.

CHRYSOLAMPIS MOSCHITUS (Linn.).

Chrysolampis moschitus Salvin, Cat. B. Brit. Mus. xvi. p. 113 (1892); Sharpe, Hand-l. ii. p. 119 (1900).

Three males and two females.

I only found this pretty little Humming-bird on one of the smaller islands of the group. In April 1906 I found it very common on Blanquilla Island, but on two subsequent visits, one in January and the other in February, I failed to observe a single specimen. There can, therefore, be little doubt that this diminutive bird annually migrates over ninety-five miles of open sea, for Blanquilla is so small and the vegetation on which the bird feeds so uniformly distributed, that it seems impossible that it could have escaped our deliberate search for it. It is not found on Margarita.

MYIARCHUS TYRANNULUS (Müll.).

Myiarchus tyrannulus Sclater, Cat. B. Brit. Mus. xiv. p. 251 (1888).

One male and four females.

These birds agree with two specimens of *M. tyrannulus* which I obtained on Margarita in 1906 rather than with five specimens obtained on Blanquilla Island, which agree with Dr. Hartert's description of his *M. brevipennis*. The plumage both above and below is darker and richer than in the latter species; but the difference in the wing measurements is very slight—Los Testigos specimens averaging 90·8 mm., while specimens from Blanquilla average 89·8 mm. The exposed culmens of

Los Testigos	specimens	vary from	17 mm.	to	20·5	mm.
Blanquilla	,,	,,	16·5	,,	18·5	,,
Curaçao	,,	,,	17	,,	20	,,

Compared with specimens of *Myiarchus oberi nugator* which I shot at St. Vincent and Grenada, all the measurements of my Testigos birds are smaller, and the general coloration not so rich.

DENDRŒCA RUFICAPILLA RUFOPILEATA.

Dendrœca ruficapilla rufopileata Ridgw. Proc. U.S. Nat. Mus. vii. 1884, p. 173.

Two males and one female.

Fairly plentiful but in poor plumage. I have referred my specimens to *D. ruficapilla rufopileata* rather than to typical *D. ruficapilla* or *D. r. capitalis*; but with such scanty material and specimens in indifferent plumage, I hesitate to express any decided opinion. The Blanquilla bird must undoubtedly be referred to this subspecies. It occurs merely as a straggler on Margarita Island. I only saw the bird on two small islets lying close to Testigo Grande.

MIMUS GILVUS ROSTRATUS.

Mimus gilvus rostratus Ridgway, Proc. U.S. Nat. Mus. 1884, p. 173 (Curaçao); Berl. J. f. O. 1892, p. 74 (Curaçao); Hartert, Ibis, 1893, p. 294.

Five males and two females.

This was one of the commonest birds met with, and was present in large numbers. A small group of mangrove-trees was, towards sunset on the day of our arrival, simply swarming with them. I have noticed them collecting together at dusk in a similar way on Margarita Island at the same season of the year. The plumage was much worn, and some individuals were beginning to moult. These birds are very numerous on Blanquilla Island, where, at the beginning of February 1907, they were in full song and commencing to nest. We shot one specimen on Testigo Grande which was pure white (irides normal).

There is no doubt that the bills of these birds, and of examples from Curaçao, Blanquilla, and possibly Margarita Island, tend to be larger than in typical *Mimus gilvus*. I have accordingly referred them to Mr. Ridgway's *M. gilvus rostratus*. Male birds are always larger than females.

The average mearsurements of the exposed culmen in birds from

Los Testigos	=	19·2	mm.	
Blanquilla Isl.	,,	20	,,	
Margarita Isl.	,,	19	,,	
Curaçao	,,	23	,,	(Ridgway, Birds of N. & Mid. Amer.)
Grenada	,,	17·5	,,	

Mr. Ridgway ('Birds of North and Middle America,' part iv. p. 236) describes this subspecies as "similar to *M. g. gilvus* (West Indian specimens), but slightly larger, with bill much larger, and white of chest less tinged with grey." I believe, however, that the amount of grey on the chest is indicative of age, for I have specimens which I shot on Curaçao which are distinctly more grey than those from Grenada and St. Vincent, and the same remark applies to my specimens from Blanquilla. My Testigos birds are, however, paler below than those I have obtained in Grenada. Two examples in my collection, one shot by me on Margarita and the other in Tobago, seem to correspond to *M. gilvus columbianus*. The wings and tails in these birds are noticeably much longer than in those under discussion. The Tobago Mocking-bird has been distinguished as *M. gilvus tobagensis*.

CŒREBA LAURÆ.

Cœreba lauræ Lowe, Bull. B. O. C. vol. xxi. p. 108 (1908).

Four males and five females.

Soon after landing on Testigo Grande I was astonished to meet with a black form of this genus similar to *Cœreba atrata* and *C. wellsi* from St. Vincent and Grenada; and I quickly became aware that it was quite common and well established there, for we soon shot as many specimens as we required, and its nests were everywhere in evidence. Previous to this discovery, an entirely black form of this genus had only been known from the two above-mentioned islands, so that the discovery of one here was of some interest. I have ventured to separate the Testigos bird chiefly on account of the fact that the bright crimson and tumid rictus which is so conspicuous an object in the St. Vincent and Grenada birds, is in this form entirely absent. The bill is also less curved. The fact that the tumid rictus is absent in this form cannot, I think, be put down to a change at the breeding-season, for in some of the examples which I shot the sexual organs were enlarged and the birds were evidently soon about to breed, although I did not find any eggs in several nests I examined. A fortnight before I had found the black *Cœreba* in St. Vincent and Grenada busily engaged in breeding-operations, and I found both young and eggs on Grenada. The brightly coloured rictus was then a conspicuous feature. The nest of the Testigos bird differs markedly in appearance from that found in the other two islands, a large amount of vegetable down being interwoven into the outside structure.

The average lengths of the exposed culmen of male specimens shot by me are as follows :—

Four males from Los Testigos . .	14·5 mm.
Five males from St. Vincent . .	14 „
Four males from Grenada . . .	13 „

The average length of wings = 62 mm., and of the tarsi =18·5 mm. Females are rather smaller.

The measurements given by Mr. Ridgway ('Birds of North and Middle America,' part ii. p. 423) of the only specimen in the Smithsonian Institute of *Cœreba atrata* seem to be much larger than is usually the case.

HOLOQUISCALUS LUMINOSUS.

Quiscalus luminosus Lawr. Ann. N.Y. Acad. Sci., July 1, 1878, p. 162.

Five males and one female.

These specimens agree in every respect with those which I obtained in Grenada. It is to be noted that this bird is not found on Margarita Island, where its place is taken by *Quiscalus insularis*. It is well represented on the island.

CARIACO PENINSULA.

We left Los Testigos in the early morning of Jan. 3rd, 1908, and after a short stay at Cumana for pratique, proceeded up the Gulf of Cariaco and arrived at the Laguna del Obispo at dusk. This extraordinary inlet of the sea is situated about halfway up the southern rock-bound coast of the Peninsula. The entrance to it is very narrow and easily missed. Once inside, the voyager finds himself on an irregular sheet of deep still water of the deepest blue, studded here and there with small islets. Surrounding it on all sides, in the fashion of a Scotch loch, are high hills. They present a series of colours which vary from rich deep red to deep yellow-ochre. In the distance the iron-tinted soil seems in places to be frosted with old silver, an effect produced by the patches of silvery-toned cactus-scrub. Along the shores, stretches of bright golden sand alternate with the deep green of the mangrove-belts. Here and there on the lower slopes patches of acacia-trees and the candelabra-like inflorescence of the agaves relieve the more sober tones of the cactus-scrub. The Cariaco Peninsula is about twenty-eight miles long by a few wide. It is everywhere of an arid and hilly nature. The vegetation is similar to that found on the lower levels of Margarita Island, and towards the eastern end becomes more luxuriant and varied. Our stay at the Laguna was on this occasion limited to a few hours, but, thanks to Sir Frederic Johnstone, I have had, on a previous occasion, the opportunity of exploring the surrounding country along with Dr. Bowdler Sharpe. My investigations at the eastern end have also been very limited, but from what I have seen I feel convinced that a more extended visit would amply repay the ornithologist. There can be little doubt that this strip of land and at least the Island of Margarita were formerly one. The rocks of both consist of Archaic schists.

I give a list of the birds which I have met with in this interesting stretch of land :—

Ortalis ruficauda Jardine. Quite common.
Eupsychortyx pallidus Richmond. A well-marked species.
Chamæpelia perpallida Hartert.
Rhynchops nigra, Linn. } Present in enormous quantities.
Phalacrocorax species? }
Pelecanus fuscus Linn. Breeding in the lagoon during our visit.
Butorides virescens robinsoni Richmond.
Cathartes aura (Linn.).
Catharista atrata (Bartram).
Polyborus cheriwayi (Jacquinot).
Parabuteo unicinctus (Temm.).
Conurus æruginosus (Linn.).
Chrysotis ? ochroptera ? rothschildi. (See below.)
Agapornis.
Ceryle alcyon Linn.
Doleromyia pallida Richmond.
Melanerpes subelegans (Bonaparte).
Formicivora intermedia Cabanis.
Dendroplex longirostris Richmond.
Sublegatus arenarum (Salvin).
Myiarchus tyrannulus (Müller).
Coryphospingus pileatus (Max.).
Stelgidopteryx ruficollis uropygialis (Lawr.).

Tachycineta albiventris, Sharpe.
Mimus gilvus subspecies?
Polioptila plumbeiceps, Lawrence.
Pachysilvia griseipes (Richmond).
Cœreba luteola (Cabanis).
Volatinia jacarini splendens Richmond.
Euetheia bicolor omissa (Jardine).
Cardinalis phœniceus, Gould.
Tanagra palmarum melanoptera.
Icterus icterus (Linn.).
Icterus xanthornus helioeides Clark.
Molothrus atronitens, Cab.

Los Hermanos Islands.

On Jan. 9th, 1908, we steamed across the ten miles of sea which separates Blanquilla from the Los Hermanos Islets. A fresh trade-wind was blowing, and a strong current was running between them, so that we had some trouble in landing on Orquilla, one of the more northern of the seven islets.

The group is situated forty-five miles due north of the north-west point of Margarita Island, which is itself about twenty miles or more from the mainland of Venezuela. They together occupy a space of about eight miles in a N.N.W. and opposite direction, and consist of masses of a granite-like rock (diorite), which rise more or less abruptly from the sea.

Orquilla, the only islet that we had time to explore, is, so far as we could judge, about two miles or more long by a mile wide. It rises to a height of 650 feet, and is covered with a thick growth of cacti, agaves, and tall coarse grass, while here and there are patches of sea-grape and fairly tall mangrove-trees. Near the top, dense masses of tall, upright Cerei grow to a height far above a man's head. In the short time at our disposal (about five hours) at least two-thirds of the island was left unexplored, owing to the very great difficulty in making a way through the scrub, so that it is possible that there may be other land-birds there which we did not come across. At a height of 600 feet there is a long, saddle-backed ridge, nearly a mile long, which we had to leave unexplored. The only other land-bird seen was a Peregrine Falcon. The whole island swarms with Iguanas.

Sula cyanops (Sundeval).

One adult male taken.

These birds were nesting, but were not present in anything like the numbers of *Sula sula* or *Sula piscator*. I have seen them in far greater abundance on Arenas and Arcas Cays in the Gulf of Mexico, where they seem to be more at home. On Orquilla they chose comparatively exposed and open spaces on the rocks. In no instance did they breed in trees or bushes. The nest, if such it may be called, is situated on the bare rock, and is not lined with either sticks or grass. In some cases I noticed a sort of ring of very finely divided pieces of rock formed round the shallow depression which does duty for the nest.

These birds seem to breed rather later than either of the two other Gannets present on the Los Hermanos rocks.

The colours of the soft parts, from notes taken on the spot, are as follows:—

Tarsi greenish drab.

Webs and feet dirty yellowish drab.

Gular sac of an Indian-ink colour.

Bill greenish yellow.

Iris yellow.

These colours do not agree with those given by Mr. Cory in his 'Birds of the West Indies.'

Sula sula (Linn.).

One adult male taken.

Present in very great numbers, and nesting. The nests were invariably situated on the bare rocks, and lined with a few pieces of grass or twigs.

The colour of the soft parts of this Gannet were taken on the spot, and are as follows:—

Tarsi and upper surface of webs bright chrome-yellow.

Under surface of webs greenish yellow.

Gular sac bright chrome-yellow.

Bill yellow at base, shading off into bluish grey.

Iris pale grey. *Eyelids* edged with bright blue; a patch of dark bluish green immediately in front of eye.

These colours do not agree in any particular with those given by Mr. Cory in his 'Birds of the West Indies.'

Sula piscator (Linn.).

This Gannet was present in greater numbers than either of the other two species. It appears to breed earlier, and, at the time of our visit, there were already young in all stages of down, a few being quite big birds. The nest is formed of twigs, grass, and sticks very roughly put together, and is ludicrously small in comparison with the size of the bird. It is invariably placed in either mangrove or sea-grape bushes. By far the greater number of nests were occupied by birds in the white-tailed stage of plumage, entirely white birds of the most adult stage being very scarce. One egg only is laid.

The colours of the soft parts have been recently described by Dr. Bowdler Sharpe and Mr. Nicoll.

Birds which I obtained on Little Cayman Island, whence examples have been distinguished by the name of *Sula coryi*, do not appear to differ in any respect, sufficient to justify distinction, from birds obtained in other parts of the Caribbean Sea.

I have found the Little Cayman Gannets breeding at exactly the same time as those on Los Hermanos.

The cause which has led these three species of Gannet, so similarly circumstanced, to constantly build their nests in dissimilar positions would be an interesting subject for speculation.

Fregata aquila (Linn.).

These birds were present in numbers amounting to many hundreds. They were busy breeding, and the island was covered with nests which contained eggs and young in various stages of nakedness and down.

The nest is formed of sticks and twigs, with a comfortable lining of dry grass, similar to the long coarse grass which grows among the boulders amidst which they were breeding. The nests on this island were raised some little way off the ground, and rested, as a rule, on the centre of a thick tussock of long grass or on some low spreading shrub. We found none until we had reached an altitude of about three or four hundred feet, and the birds chose ground of the roughest and rockiest description, so that they were partly hidden among boulders, long grass, and cactus. Only one egg appears to be laid. The young bird when hatched is naked. The parent birds were astonishingly tame and confiding.

The commonest form of plumage which we noticed was that in which the head, neck, nape, and back were all black, relieved by a beautiful greenish-purple sheen, the throat and thorax being white. Next came a form in which the head, neck, nape, and breast were entirely white; while infinitely the rarest variety was that in which the head and neck were black, but the throat exhibited the conspicuous and remarkable red gular pouch. The first stage consists apparently of both young males and females, the next of older females, and the last of old males. I saw all three varieties incubating.

So far as I have been able to observe, it is only the fully adult male that exhibits the extraordinary balloon-shaped pouch, which it can distend at will. I, however, noticed some birds, apparently not *fully*-adult males, with *orange* gular sacs, and some, apparently still younger males, with the white throat and breast, mottled and streaked with black, in a stage antecedent to the perfectly fully-adult male. These appeared to have no distensible gular sac, or at any rate it was not apparent. The fully-adult males were very shy, and I could not get near enough to take photographs of the few I found sitting on nests. As we reached the top of the island (650 ft.), some of these old males were soaring against the strong trade-wind just above our heads. The vivid red, almost translucent, and distended pouch waggled about in the breeze in a somewhat ludicrous way. It appears to have a constricted and elongated neck, which allows it to "flop about" in an apparently purposeless manner.

The colours of the soft parts in young males and young females are as follows :—

Bill pale bluish grey, light lavender-blue at base.

Interramal bare space pale lavender-blue, darker here and there.

Iris sepia-brown ; *circumorbital bare space* dark cobalt-blue.

Webs and feet pale flesh-coloured.

The two birds from which the notes of these colours were taken were a male and female respectively, with the entirely black head and nape. I took them home in a frozen state to Mr. Pycraft, and together we tried to distend the gular sac by artificial means, but after repeated efforts failed to do so.

PHAËTON ÆTHEREUS Linn.

We found numbers of these beautiful birds breeding in holes among the broken masses of rocks which were strewn everywhere on the steep slopes of the island, but not until we had reached an altitude of about 300 feet. No attempt at making any sort of nest is made. At the time of our visit the nesting-places contained both eggs and downy young. The breeding-habits do not appear to differ in any particular from those of *P. americanus*, except in regard to the time of year at which the birds commence. I have found the latter species breeding in the Bermudas in the middle of May.

CHAMÆPELIA PERPALLIDA.

Columbigallina passerina perpallida Hartert, Ibis, 1893, p. 304.

I noticed a fair number of these Ground-Doves. They were exceedingly tame and allowed us to approach within three or four yards of them. The specimens I secured are the palest I have seen.

MARGAROPS FUSCATUS (Vieillot).

Margarops fuscatus fuscatus Ridgway, Birds North & Middle Amer. pt. iv. p. 265.

Two males and one female.

The first specimen secured was shot at an altitude of about 400 ft., the other two on the central saddle-backed ridge (600 ft.). It was rather strange to come across these Thrushes on an island which is entirely waterless. They appeared to be well established there, however. Dr. Hartert has recorded them from the Island of Bonaire, near Curaçao.

My specimens agree in coloration of plumage with typical specimens in the British Museum, but the measurements are rather smaller. They are as follows:—

	Wing.	Exposed culmen.	Tarsus.
	mm.	mm.	mm.
♂	131	26	32
♂	132	25	32
♀	131	26	32

The average measurement of the tarsus of birds in the British Museum collection is 36·5 mm.; the average measurement (of males) given by Mr. Ridgway ('Birds of North and Middle America') is 37·5 mm.

EUETHIA BICOLOR JOHNSTONII.

Euethia johnstonei Lowe, Bull. B. O. C. vol. xix. p. 6 (1906); id. Ibis, 1907, p. 120.

A fair number of these dark little Finches were present on the island and I shot several specimens. They are in every way identical with those which I obtained on Blanquilla, where they are very numerous. It is remarkable that this bird, which lives amidst such very similar surroundings to the Curaçao bird (*E. bicolor sharpei*), should differ from it in such a marked manner. I had the opportunity of shooting and examining some examples of the latter a fortnight after visiting Blanquilla and Los Hermanos, and was surprised to find it such a light-coloured form. The chin, throat, and breast are of a dull slaty grey, while the Blanquilla bird is the darkest of the genus.

The *wings* of nine males of *E. b. johnstonei* average 53·6 mm., while the *tarsi* average 16·3 mm.

HOLOQUISCALUS INSULARIS Richmond.

Quiscalus insularis Richmond, Proc. U.S. Nat. Mus. xviii. p. 675 (1896).

Holoquiscalus insularis Ridgway, Proc. Wash. Ac. Sci. iii. p. 151 (1901).

Five males and three females.

We met with many examples of this insular form, which has thoroughly established itself on the island. Strangely enough, it is not found on Blanquilla, which is only ten miles away—at any rate, I have never seen a single specimen there during three visits.

The differences between this form and *Holoquiscalus lugubris* which inhabits the mainland are only slight; the males are rather larger, and the females differ in the much lighter brownish-grey colour of the throat, while the back and head are also lighter.

Mr. Richmond says that the colour and pattern of coloration in the female are very similar to those of the female of *Molothrus ater,* but are slightly darker.

The average measurements of my birds are as follows:—

	Wing.	Tail.	Exposed culmen.	Tarsus.
	mm.	mm.	mm.	mm.
Five males . .	118	95	27	31
Three females .	102	83	23	28

Two of my males are not fully adult. They are much browner above and below than adult birds, and some of the quill-feathers are almost pure hair-brown. All my specimens are in poor plumage, and the wings and tails are somewhat worn. These birds are apparently fond of a little animal diet, for I watched a female trying for a long time to break the egg of a Gannet which had just left its nest. It kept persistently hammering at the egg with its bill, and on being driven away quickly returned to the nest and commenced operations again. I saw them feeding on the flowers of the Agave, in the calyces of which they apparently find many insects attracted by the honey. In

Cuba I have also seen the candelabra-like flower-scapes of the Agave crowded with another Icterine bird, viz. *Icterus hypomelas*.

BLANQUILLA ISLAND.

On January 7th we arrived at Blanquilla Island, which Sir Frederic Johnstone had very kindly consented to touch at again to enable me to get a series of specimens of the Parrot found there, which I had been unable to do during our previous visit. In addition to securing seven of these birds, which are to be found in abundance on the island, I also obtained one or two examples of a Tyrant, *Tyrannus dominicensis* (Gmelin), which I did not meet with on our first visit to the island in 1906, and four more examples of the *Myiarchus* which I have referred in my paper on the birds of Blanquilla ('Ibis,' 1907, p. 118) to *Myiarchus tyrannulus*. I think there can be no doubt, however, that these birds should be called *Myiarchus brevipennis* Hartert. I have compared my examples with a series kindly sent to me by Dr. Hartert from the Tring Museum, and mine appear to be identical with his.

CHRYSOTIS ROTHSCHILDI.

Chrysotis rothschildi Hartert, Bull. B. O. C. iii. p. xii; id. Ibis, 1893, pp. 123, 328; Lowe, Ibis, 1907, p. 117.

Six males, two females, and one immature specimen unsexed.

I have compared my series of Parrots from Blanquilla with a series from Bonaire, which Dr. Hartert kindly lent me for comparison from the Tring Museum. It included the two types of *C. rothschildi*. As noted above, I have referred my Blanquilla birds to this form, but the series is rather puzzling.

Some of my specimens agree with *C. rothschildi* in that the green coloration extends to the lower mandible, and is seen as a bar on either side of the chin. The distribution of the yellow colour on the vertex and sides of the head also agrees with Dr. Hartert's description of this bird; but, on the other hand, several of my examples exhibit the rich golden or orange-yellow on the chin and throat which is present in *C. ochroptera*, whereas in *C. rothschildi* Dr. Hartert states that no yellow feathers are to be seen on the throat.

As regards, too, *the red coloration of the cubital edge*, which Dr. Hartert makes a point of distinction between the two species, in some of my birds it is marked, in others not at all. As regards the *yellowish-green* coloration of the outer bend of the wing, my specimens agree with his description, and in all of them the feathers of the abdomen and back shew black edges, while in most the abdomen is tinged with blue. One has some bluish feathers mixed with the yellow on the forehead, a character which Dr. Hartert notes as also occurring in one of his examples from Bonaire. I agree with him in thinking this a sign of immaturity.

To add to my difficulty I have a specimen which I shot on the Cariaco Peninsula which more closely corresponds with Dr. Hartert's description of *C. rothschildi* than any of my Blanquilla birds, and two specimens from Margarita Island also have green on the cheeks and sides of the face, whereas others I brought from this island undoubtedly correspond with examples of *C. ochroptera*.

It would be strange if out of all the nine birds I shot on Blanquilla there was not one in really fully adult plumage, and if the series actually illustrates different phases of the plumages of *C. ochroptera*.

SWAN ISLANDS.

On Jan. 19th, 1908, after a passage of over a thousand miles from the Island of Curaçao, we came to anchor in a charming little bay at the western end of these two small twin islands. They are situated at the western end of the Caribbean Sea, and lie ninety-eight miles nearly due N.E. from Patook Point, which is the nearest part of the mainland of Honduras. Although in some respects disappointing from an ornithological point of view, yet no island, however small, which is so isolated, can possibly be altogether uninteresting. The two islands, which are separated by only a shallow channel two or three hundred yards in width, together stretch for four or more miles in an easterly and westerly direction. The easternmost has always remained uninhabited. The western island is now occupied by the owner and his family. Both islands, except where clearings have been made in the last fifty years, are densely wooded, and until about the year 1840 they had remained completely uninhabited; but in the old buccaneering days they seem to have occasionally been visited by the sea-pirates, who used them as a rendezvous for cutting off Spanish vessels returning to Europe. The islands apparently owe their name to the famous Captain Swan. So far as resident and really indigenous birds are concerned, the islands are, as I have indicated, disappointing; but, considered from a migratory point of view, they would no doubt form an excellent point from which to observe birds in the spring and autumn migrations to and from Central America. I was informed by the owner that at these seasons they were visited by a great influx of birds.

Similarly to what obtains in the Caymans (180 miles distant), Humming-birds are not represented, and, strangely enough, I did not come across a single representative of the Tyrant family, nor any examples of the genus *Cœreba*.

COLUMBA LEUCOCEPHALA Linn.

This is a common and well-established species. It breeds on both islands, and is not nearly so shy as such Pigeons usually are. On the eastern island it is, in fact, almost confiding, and I shot six or seven specimens with a small collecting-gun in less than half an hour.

Colours of soft parts in the fresh state :—

Iris white or creamy white.

Circumorbital bare space white on a pinkish background, which here and there shews through the white.

Base of mandible and maxilla dull crimson-lake, dull crimson, or dark brownish purple according to age.

Tip of bill pale greenish white, horny white, or pearly green.

Feet and tarsi bright crimson, *claws* brown.

COLUMBA CORENSIS Gmel.

Although I did not secure any examples, I was told that a second Pigeon was found on the island, and from the description given me I concluded it to be this form.

SULA SULA (Linn.).

Nesting in quantities on the easternmost of the two islands.

Young birds just able to fly are *entirely* brown; *webs and feet* dirty yellow. *Bill* slaty grey, not yellow at base. *Irides* pearly grey.

Some of the nests on this island were made with a foundation of twigs and were lined with sea-grape leaves, while others were merely depressions in soft beds of a *Mesembryanthemum*-like plant which covered the rocks near the shore. The island swarmed with iguanas, which were crawling about among the young Gannets.

SULA PISCATOR (Linn.).

Many of these birds were nesting on the eastern island at the time of our visit.

FREGATA AQUILA (Linn.).

A large colony of these birds was breeding on the easternmost of the two islands, and, contrary to what obtains on the Los Hermanos group, the nests were placed on the tops of fairly tall trees about twenty-five to thirty feet high, in some cases as many as eight or nine being found in one tree. The alarm-note (if such it is) of this bird while on its nest is peculiar, being a series of rapidly repeated half-guttural half-whistling sounds, very difficult to describe. While uttering these sounds the mandibles are alternately and rapidly opposed and separated, the interramal space being slightly distended. When alighting on its nest the Frigate-bird is extremely clumsy, and, if flurried, will often slip through the branches and fall to the ground, where it is helpless and more often than not is unable to regain its native element through the thick overspreading branches. We found the desiccated bodies of several birds hanging by the neck from a forked branch, having evidently slipped down from their nests and been caught up by the fork as they fell. We had been previously solemnly assured by a West-Indian negro that Frigate-birds sometimes commit suicide. The owner of the island told me that these birds eat an enormous quantity of young turtles that have just taken to the sea, when they are unable to dive. I am not aware whether or no Frigate-birds are known to take draughts of water, but I watched for some time a band of about twenty hovering over a large pond of fresh water on the western island, and every now and then dipping down to it one after the other in the apparent endeavour to scoop some of it into their bills. The bill at each stoop was dipped lightly into the water, and I could discover nothing either on the surface or in the water on which they could be feeding. Dr. Adams, the son of the owner, assures me he has often seen Frigate-birds doing this, and he is convinced that they are then drinking. It is a mistake to suppose that they live entirely on animal-matter floating on the surface of the water, or on prey which they make Gannets and other birds disgorge, for I have myself seen one chase and capture a fine flying-fish which was skimming over the waves. If by any mischance a bird happens to find itself in the water, it is very seldom able to rise unless there is a fresh breeze, and it sooner or later perishes.

FALCO COLUMBARIUS Linn.

An American Merlin was seen and shot. The owner told me that he had been interested to note many Hawks of different species apparently following in the track of birds migrating during the autumn and spring. I have shot the present species in both the Grand and Little Cayman Islands.

Crotophaga ani Linn.

I met with flocks of this Cuckoo in nearly every open space on the island. The only specimen I shot, a male, does not differ from those obtained elsewhere. In its stomach I found four lizards and the remains of several large beetles. This bird has probably established itself here recently, for it prefers open spaces, and sixty years ago the island must have been uniformly and densely wooded.

Mimocichla rubripes (Temm.).

Mimocichla rubripes eremita Ridgw. Proc. U.S. Nat. Mus. x. p. 575 (1887).

This Thrush has been separated from the typical *M. rubripes*, which inhabits the western end of Cuba, by Mr. Ridgway on the ground that it "averages larger, has shorter toes," and that "the white of the chin and malar region is usually more extended."

During a stay of nearly three weeks various collecting-parties from the yacht hunted high and low and searched every corner of the island for this species, but without seeing a sign of it. It is strange if it has died out, for the owner of the island takes great care to preserve the birds. He tells me that occasionally he sees members of this *genus* in October; but that is a month of gales, and no doubt these birds have been blown over from Cuba, the Grand Cayman Island, or elsewhere.

The measurements given by Mr. Ridgway ('Birds North and Middle America,' part iv. p. 85) would not, in my opinion, justify the creation of a new subspecies; and the variation in extent of the white on the chin and malar region, which is the only other distinction given, does not seem to be constant according to Mr. Ridgway's description.

Galeoscoptes carolinensis (Linn.).

Several specimens taken.

This bird was extremely abundant on the island, and I was assured by the owner that it breeds there. It does not appear to differ from the form found elsewhere. Considering the distant localities in which this bird is found breeding, it appears to be a remarkably constant species.

I have found nests and eggs in Bermuda. The eggs are of a beautiful Egyptian blue colour.

VIREO NOVEBORACENSIS (Gmelin).

I shot a single example of this bird, which was the only one I saw. The throat and upper breast of this specimen are of a deep buff.

Colours of soft parts:—

Mandibles silvery white.

Maxilla dark horn-coloured.

Tarsi bluish grey.

Claws whitish.

I am rather surprised that Mr. Ridgway does not consider *Vireo noveboracensis bermudianus* Bangs a very satisfactory subspecies, for I have a series of nine examples that I shot in Bermuda, which, compared with birds from Florida shot at the same season of the year, are, strikingly and constantly, very much duller in coloration, and have not the same rich yellow of the under parts.

MNIOTILTA VARIA (Linn.).

I contented myself with procuring two specimens of this Black-and-White Warbler, a male and a female. It was fairly abundant on the trees at the edges of the clearings. It is met with in the winter throughout all the West-Indian islands, and is far more like our Tree-creeper in habits than a Warbler.

HELMITHERUS VERMIVORUS (Gmelin).

One adult male.

This was the only example of this Warbler I saw. It is a winter visitor from the Eastern United States.

DENDRŒCA CORONATA (Linn.).

I noticed several bands of these birds feeding in the recent clearings, and shot one or two specimens. I have also seen many of them on the Grand Cayman Island. This species is a winter visitor from North America.

DENDRŒCA DOMINICA (Linn.).

I shot a male example of this Yellow-throated Warbler. It was the only example that I saw. It is a winter resident or straggler.

DENDRŒCA VITELLINA Cory.

Dendroica vitellina Cory, Auk, iii. 1886, pp. 497, 501.

I obtained a series of thirteen of these little Warblers, which are peculiar to these islands and the Grand Cayman. It consists of adult males and females, and also of individuals in various stages of immature plumage. The bird is very abundant on both the Swan Islands and is extremely tame.

It differs from *D. discolor* in being larger and in lacking the chestnut spots on the back. The broad black streaks along the sides of the breast and flanks which are so conspicuous in *D. discolor* are either entirely absent or are only faintly indicated by dusky streaks. It is incorrect, as Mr. Ridgway states ('Birds of North and Middle America,' part ii. p. 610), to say that they are *always* absent, for in some specimens which I have obtained, both on these islands and the Grand Cayman, the faint dusky lines are easily observed.

I have compared examples from the Swan Islands with my birds obtained on the Grand Cayman and also with those which Mr. Nicoll obtained on the same island, and they appear to me to be identical. They also differ from specimens which I obtained on the Little Cayman (*D. crawfordi* Nicoll) in the points which Mr. Nicoll has already indicated.

D. vitellina would seem to be a well-marked and very constant species. According to Mr. Ridgway ('Birds of North and Middle America,' vol. ii. p. 610) the under parts of the young of this species in first plumage are entirely white, washed with yellow, so that eight immature birds in my series from the Swan Islands would appear to be in an intermediate stage between the young in first plumage and the adult.

My two most immature birds are ashy grey above, with a slight tinge of greenish yellow on the lower back and upper tail-coverts; lores and superciliary stripe white; sides of face dusky, fringed with yellow on the cheeks; throat white; fore-neck and entire under surface of body pale yellow. The next three are similar to the foregoing, but have the lores and superciliary stripe tinged with yellow, as also the chin and throat, leaving a more or less white band across the lower throat, which separates the yellow on the chin and upper throat from that of the breast and remaining portions of the under surface. The four remaining examples exhibit an increasing amount of yellow on the lores, superciliary stripe, and entire under surface of the body. No trace of the white band across the throat remains, and they approach more nearly to the bright yellow of the adult bird.

DENDRŒCA PALMARUM (Gmelin).

I shot one or two specimens of this Palm-Warbler for identification. It was not so well represented on the islands as *D. coronata*, but is very common on the Cayman Islands.

GEOTHLYPIS TRICHAS BRACHYDACTYLA.

Geothlypis trichas brachidactyla (Swainson).

I noticed a fair number of these pretty little "Yellow-throats." Having unfortunately shot only one specimen I am not sure that I am justified in referring it to the northern form of *G. trichas*. My specimen, however, seems to be identical with one I have in my collection from Eastern Mexico. The wing of this bird measures 57 mm.

I have nine specimens which I collected on the north coast of Cuba in February 1907, the wings of which average 52·5 mm., and I consider that these birds should be referred to typical *G. trichas trichas*; but Mr. Ridgway ('Birds of North and Middle America,' part ii. p. 655) says, in discussing the range of this form, "The only extra-limital specimens that I have seen which seem without doubt referable to this form are from certain islands of the Bahama group." It may be, however, that they should be referred to Mr. Chapman's *G. trichas ignota,* with which I have not been able to compare them.

SETOPHAGA RUTICILLA (Linn.).

I observed a few examples of this "American Redstart" and shot a female specimen.

Of birds seen and identified, but of which I did not think it necessary to take specimens, the following is a list:—

Arenaria interpres (Linn.).
Ægialitis wilsonia (Ord).
Ardea cærulea Linn.
Botaurus lentiginosus (Mont.).
Pandion haliaëtus carolinensis (Gmel.).
Falco peregrinus anatum (Bonap.).
Ceryle alcyon (Linn.).

Besides these I was informed that, among many others that I was unable to identify with certainty from the descriptions given, the following birds constantly visited the islands:—

Aristonetta valisneria (Wils.). 41 were once shot in one week.
Nettion carolinensis Gmel.
Querquedula discors (Linn.).
Mareca americana (Gm.).
Gallinula galeata (Licht.). Common in Grand Cayman Island.
Passerculus sandwichensis (Wils.).
Tyrannus dominicensis (Gmel.).

I have unfortunately been unable to consult Mr. Ridgway's notes on the birds of this island (Proc. U.S. Nat. Mus. x. 1888, p. 576), and so I am unaware of what birds were met with by Mr. Townsend when he visited it in February 1887.

GRAND CAYMAN ISLAND.

Leaving the Swan Islands on the evening of Feb. 10th, we arrived in the afternoon of the next day at the Grand Cayman Island, and anchored off Georgetown, the capital. Our stay here was limited to twenty-four hours, but in January 1904 Sir Frederic Johnstone had previously visited the Caymans in the yacht 'Emerald,' and thanks to this I then had the opportunity, in company with Dr. Bowdler Sharpe, of making a more extended acquaintance with the many interesting insular forms with which these islands abound. As Mr. Nicoll ('Ibis,' 1904, pp. 577–589) has lately given a description of the birds he met with there, I simply add some notes on some of the more interesting and peculiar forms. Neither Dr. Bowdler Sharpe, Mr. Nicoll, nor myself succeeded in finding any examples of *Mimocichla ravida* Cory, a Thrush peculiar to the Grand Cayman; but I was informed by a squatter who lives on the northern side of the island, which is covered with tall trees and bush, that this bird breeds there and that he knows it well. Neither did we see anything of another bird which Mr. Cory has separated from *Icterus leucopteryx* of Jamaica and to which he has given the name of *Icterus bairdi*. I covered a large amount of country where I should naturally have expected to meet with this bird, and I have read Mr. Ridgway's description of it in his 'Birds of North and Middle America' (Mr. Ridgway has not seen an example), but I must confess to having some little doubt as to the status of the form. I make this remark because I am of opinion that, in these West Indian islands which are so often visited by hurricanes, when a bird is met with which is evidently quite rare and apparently struggling to exist we ought to feel quite sure that it is not merely a straggler from neighbouring islands or has been introduced, as is the case with *Icterus icterus* of St. Thomas, which I have found there but which does not differ from typical examples.

Of the handsome Grand Cayman Parrot (*Chrysotis caymanensis* Cory), I have never been able to shoot any examples, but I have seen it in the wild state and also in cages. It is quite common on the northern side of the island and is a well-marked species.

ZENAIDA SPADICEA Cory.

Zenaida spadicea Cory, Auk, iii. p. 498.

I have five specimens of this pretty Dove from the Little Cayman, where it is common. Unfortunately I have never been able to secure any specimens from the Grand Cayman. Mr. Cory has, on the strength of one specimen, provisionally proposed the name of *Z. richardsoni* for the Little Cayman form; but, from the description he gives, his specimen is one not in fully adult plumage, and I prefer to think that the birds from the two islands are identical. This is a good species.

CHAMÆPELIA JAMAICENSIS Maynard.

Columbigallina passerina insularis Ridgw. Proc. U.S. Nat. Mus. p. 574 (1887).

Columbigallina jamaicensis Maynard, App. Birds West Indies, 1899, p. 34.

I shot five or six of these Ground-Doves, which still appear to me to be identical with the birds found in Jamaica. I have previously ('Ibis,' 1908, p. 107) given my reasons for preferring to drop Linnæus's specific name of *passerina* for this Dove and for calling it *C. jamaicensis* Maynard. During my last visit to the Grand Cayman I shot a Ground-Dove with the base of the bill crimson as in *C. aflavida* of Cuba, which was evidently a straggler from this island. I have over a hundred specimens of the genus from various islands in the Caribbean Sea in my collection, and this was the only occasion in which I have found the colour of the bill to vary from that normally found in the locality.

CENTURUS CAYMANENSIS Cory.

Centurus caymanensis Cory, Auk, iii. pp. 499, 502 (1886).

I met with this Woodpecker in abundance, but only shot two examples. It differs from two specimens that I shot in Cuba in lacking the black superciliary mark.

COLAPTES GUNDLACHI Cory.

Colaptes gundlachi Cory, Auk, iii. pp. 498, 502 (1886).

I obtained six specimens of this very handsome Woodpecker, which agree with Mr. Cory's original description. I have never met with its Cuban ally.

ELÆNIA MARTINICA RIISII.

Elainea riisii Sclater, Proc. Zool. Soc. Lond. 1860, p. 314.

Elainea martinica Nicoll, Ibis, 1904, p. 582.

Elænia martinica caymanensis Berlepsch, Proc. Fourth Internat. Orn. Congr. 1907, p. 394.

Count Berlepsch has lately separated this Tyrant on the ground that it "differs from true *E. martinica* of the Windward Islands in being much paler and more uniform greyish-brown (less mottled) on the upper parts." He says also, "in colour they agree with *E. riisii* from St. Thomas and Curaçao, but have the large measurements of *E. martinica.*"

I have only three specimens from the Grand Cayman, but I have carefully examined a fine series collected by Dr. Bowdler Sharpe and Mr. Nicoll, while I have compared them with examples from St. Thomas in the British Museum and my own collection, and they appear so similar that with all regard to such an authority as Count Berlepsch it appears to me that it would have been better to have referred this form to *E. martinica riisii,* which I venture to do. My examples from St. Thomas certainly give me the impression of being *slightly* smaller than examples from the Grand Cayman, but when measurements are taken the differences are very slight indeed.

I notice that Mr. Ridgway ('Birds of North and Middle America,' part iv. pp. 428, 429) has included examples of *E. m. riisii* with true *E. martinica*; but the former bird is constantly and uniformly very much paler, and is also noticeably smaller, than examples from Dominica, Martinique, St. Lucia, and St. Vincent.

From a geological point of view this form, *E. m. riisii,* ought to be found in Porto Rico, Culebra, St. Thomas, St. John, and the whole of the Virgin Islands, which are all situated on the same submarine elevation.

With the form or forms which are found in the happy hunting-ground for new subspecies which lies between the islands of Anguilla and Montserrat, I have no personal field acquaintance; but after cruising among these islands and observing how very close to one another and how small they are, and after studying charts of the surrounding submarine banks, I can only wonder if the creation of numberless subspecies is not a scientific mistake.

TOLMARCHUS CAUDIFASCIATUS CAYMANENSIS.

Pitangus caudifasciatus Cory, Auk, iii. p. 502 (1886).

Pitangus caymanensis Nicoll, Ibis, 1904, p. 582.

Tolmarchus caymanensis Ridgw. Birds North & Middle Amer. part iv. p. 681.

I possess only one specimen of this species from the Grand Cayman. It agrees with Mr. Nicoll's description of this insular form.

MYIARCHUS SAGRÆ Gundlach.

Myiarchus denigratus Cory, Auk, iii. pp. 500, 502 (1886).

Mr. Cory says: "This is a very dark species, easily distinguished from any other West Indian form."

I have compared my specimens, which I shot on the Grand Cayman, with six examples of *M. sagræ* which I obtained in Cuba, and I am in entire agreement with Mr. Ridgway in not being able to distinguish the slightest difference between the two forms. My series from both islands were in very good plumage.

MIMUS POLYGLOTTOS ORPHEUS.

[*Turdus*] *orpheus* Linn. Syst. Nat. ed. x. i. 1758, 169.

Two males which I shot are referable to this subspecies. I notice that Mr. Ridgway ('Birds of North and Middle America,' part. iv. p. 232) does not admit the subspecific rank of *Mimus p. portoricensis* Bryant, from Porto Rico, but two birds in my collection from that island would seem to justify it. I found some low bush country near Guanica, in Porto Rico, simply swarming with this species, but unfortunately only shot two examples.

VIREOSYLVA CAYMANENSIS Cory.

Vireo caymanensis Cory, Auk, iv. p. 7 (1887).

Three males and one female.

When compared with *V. magister* these birds differ in being paler green above and yellowish white instead of ochreous white below.

VIREO CRASSIROSTRIS ALLENI.

Vireo alleni Cory, Auk, iii. pp. 500, 501 (1886).

Vireo crassirostris alleni Cory, Cat. W.I. Birds, pp. 116, 153 (1892).

One male and one female.

The nearest ally of this large-billed Vireo is *V. crassirostris* of the Western Bahamas, from which it hardly differs.

The song of this bird is very similar to that of *V. noveboracensis*; so similar in fact that I shot these two individuals under the impression that they belonged to that species, and did not discover my mistake until getting back to the yacht. Otherwise I might have obtained several other specimens.

DENDRŒCA PETECHIA (AURICAPILLA?).

Dendroica petechia auricapilla Ridgw. Birds North & Mid. Amer. part ii. p. 517.

Dendroica aurocapilla Cory, Auk, vi. p. 31 (1889).

Six adult males and one adult female.

The Grand Cayman bird has been separated from *D. petechia* of Jamaica on the ground that it has "decidedly shorter wing and larger bill and feet."

The measurements of four males which I shot in January 1904 are as follows:—

	Wing.	Exposed culmen.	Tarsus.
	mm.	mm.	mm.
(1)	63	9·5	19·5
(2)	64·5	10·5	20
(3)	64	10·5	20
(4)	62·5	10	19·5

According to the measurements given in Mr. Ridgway's 'Birds of North and Middle America,' the wings of male specimens of *D. petechia* from Jamaica average 65 mm., the exposed culmen 10·6, the tarsus 20·5.

Dendrœca vitellina Cory.

Dendroica vitellina Cory, Auk, iii. pp. 497, 501 (1886).

One male and two adults unsexed.

I have previously discussed this well-marked form in describing the birds of Swan Island.

Cœreba sharpii (Cory).

Certhiola sharpei Cory, Auk, iii. p. 497 (1886).

Certhiola sharpei Nicoll, Ibis, 1904, p. 580.

Seven adults and one immature specimen.

An exceedingly common bird and met with nearly everywhere, but especially in the outskirts of Georgetown, where it is attracted by the flowers. Its call-note reminded me somewhat of a Gold-crested Wren, but it is louder. These birds seem busy all the day through, creeping about among the branches and searching continually for insects, which they seem to find as much among the leaves and their axils as in the interior of honey-laden flowers or pollen-laden inflorescences.

The wings of my seven adult birds average 60·4 mm., while the exposed culmens of males only average 13·7 mm., which is a smaller measurement than that given by Mr. Ridgway ('Birds of North and Middle America'), who states that the bill in *C. sharpei* is larger than in *C. caboti* from the Island of Cozumel, Yucatan. The plumage in nearly all my specimens is a good deal worn, so that the difference in wing and tail measurements between the two species must be very trifling.

Two specimens which I shot on Little Cayman Island agree with those from the Grand Cayman.

Melopyrrha taylori Hartert.

Melopyrrha nigra Cory, Auk, iii. p. 501 (1886).

Melopyrrha taylori Hartert, Nov. Zool. iii. p. 257 (1896).

I have two males and one female of this insular form. One of the males is immature. They differ from the Cuban form *M. nigra* in the points indicated by Dr. Hartert.

I found this bird shy and not at all easy to procure. It frequents thick bush country. I found the Cuban bird fairly common at the eastern end of Cuba on the north coast, where it seemed to be more gregarious than in the Grand Cayman.

SPINDALIS SALVINI Cory.

Spindalis salvini Cory, Auk, iii. p. 499 (1886).

I obtained four males of this fine species, which, owing to its skulking habits, is difficult to find.

Mr. Cory has compared it with *S. pretrei*, but it is a much larger bird than that species. Mr. Ridgway, who has not seen any examples of this Cayman bird, very rightly says that, "judging from the description, it seems to be more like *S. benedicti* than any other." I have compared my specimens with a series of the latter species in the British Museum collection and with eight examples of *S. pretrei* in my own, and I find that the chestnut coloration of the breast in *S. salvini* is more defined than in *S. benedicti*, the lower margin tending to be well differentiated from the clearer yellow of the lower chest, whereas in *S. pretrei* the colours blend imperceptibly and are lighter. The median throat-stripe is lighter in *S. salvini* as compared with *S. benedicti* and of a more yellowish tint, not "more orange" as suggested by Mr. Ridgway, and the rump is paler—brownish orange as compared with chestnut.

S. salvini is, in fact, generally less rich in coloration in every way than *S. benedicti*, but is far nearer to it than *S. pretrei*. The back in *S. salvini* is yellowish olive and is distinctly lighter than in *S. pretrei*.

I append wing-measurements of four specimens of each species:—

S. salvini.	*S. benedicti.*	*S. pretrei.*
mm.	mm.	mm.
88	80	72
88	81	69
85	79	74
85	82	73

The female has never been described.

HOLOQUISCALUS CAYMANENSIS (Cory).

Quiscalus caymanensis Cory, Auk, iii. pp. 499–502; Ridgw. Proc. U.S. Nat. Mus. 1887, p. 574.

Holoquiscalus caymanensis Ridgw. Proc. Wash. Ac. Sci. iii. p. 151 (1901).

Three males and two females.

This is a smaller bird than *H. gundlachi*, which is found in Cuba, and the contour-feathers in the *male* exhibit a bluish or violet-blue gloss as compared with a more purely violet gloss in Cuban birds. The quill-feathers have a beautiful bluish purple sheen, while the wing-coverts are shiny bluish green.

Female (previously undescribed). Similar to the male, but distinctly smaller and duller and lacking the rich bluish purple gloss; the black of the upper parts has a greenish hue, while the lower parts have a dull brownish tint, with hardly any gloss.

Female examples of this genus which hail from the Greater Antillean Islands do not exhibit the brown coloration which obtains in those from the Lesser Antilles and further south.

I append measurements of four males and two females.

	Wing.	Tail.	Exposed culmen.	Tarsus.
	mm.	mm.	mm.	mm.
Ad. ♂ . . .	133	115	29	32
Ad. ♂ . . .	133	115	29	32
Ad. ♂ . . .	133	114	32	35
Ad. ♂ . . .	136	113	32	35
Ad. ♀ . . .	119	100	25	29
Ad. ♀ . . .	114	101	25	29

XIV.—*Remarks on the Practice of attaching "Authorities" to the Scientific Names of Animals.* By P. L. SCLATER, D.Sc., F.R.S.

LINNÆUS, as we all know, was the founder of the Binomial System of nomenclature for animals and plants. Before his time authors had invented "Genera," but had generally used a short diagnosis for the designation of the species. Linnæus converted the diagnosis into a single specific name, and established the system, now universally adopted, that animals and plants should have two scientific names and two names *only*—one that of the genus and the other that of the species.

The immediate followers of Linnæus adhered pretty closely to his rule, but in course of time, as the multitude of names increased, the custom arose of adding the name of the author to the generic and specific names. So far has this custom been carried by many writers that even the most familiar names, such as "*Corvus corax*" and "*Turdus musicus*," are not considered to be complete unless the name of the authority be placed after them. Thus, if this custom be invariably followed, we should have in fact a trinomial system of nomenclature instead of the simple binomial system of Linnæus.

When the number of genera began to be augmented and the names of animals were often transferred from one genus to another, it became a question whether the authority to be attached to the generic and specific names should be the name of the writer who first gave the species its specific name or the name of the writer who first placed the species in the proper genus and made a correct combination of the generic and specific names. After some discussion it was generally agreed that the name appended to the genus and species should be that of the writer who first described the *species*, but that if a subsequent writer transferred the species into a different genus, the first writer's name should be enclosed in brackets. Thus the name of the Song-Thrush still remains "*Turdus musicus*," but that of the Rock-Thrush, "*Turdus cyanus*" of Linnæus, on being transferred into the genus *Monticola*, became *Monticola cyanus* (Linn.), not *Monticola cyanus* Boie.

The question I now wish to consider is whether it is necessary or advisable to continue this practice of *always* adding the name of the author who first described the species to the generic and specific names, and thus, as I have said, to convert the binomial system of Linnæus into a trinomial system.

In the case of the non-scientific or ordinary reader it seems to me that this practice is of very little advantage or rather of no use at all. It is probably quite as much as the ordinary reader can do to recollect the two terms of which a scientific name is composed, without having to carry in his memory also the name of the author who first published the specific name. Moreover, the author's name is frequently stated only in such an abbreviated or symbolical form as to be quite unintelligible except to the expert zoologist. Thus, "Bp.," "Gm.," &c., which often occur in zoological literature, are terms well understood by the zoologist, but are undecipherable enigmas to the outsider, and, so far as he is concerned, may be advantageously omitted.

To the expert also, that the name of the authority for the species should be added to the generic and specific name seems to be of very little advantage. In the case of all familiar animals (such as *Felis leo, Turdus musicus, Bufo calamita,* &c.), it may safely be omitted, as conveying no additional information whatever. In the case of the less-known species it would be much better to give, when it is considered necessary, a reference to the original description of the species or to some standard work (such as the 'Catalogue of the Birds in the British Museum') in which it has been described. In the case of "British Birds" it is obviously unnecessary to give more than the generic and specific names under which the species is designated in the List of the B.O.U. This List was specially prepared for the use of writers in 'The Ibis' by a Committee of experts. Saunders used the same names in his excellent 'Manual,' and, with very few exceptions, they remain valid at the present time.

I will not on the present occasion go into the vexed question of "subspecies" and how to call them, but merely repeat the conclusions which I have come to on this subject as follows:—

(1) That the "authority" (as it is usually called) does

not form a part of the scientific name of any species, but, when added, is merely for convenience of reference.

(2) That in the case of the names of all well-known species the "authority" is quite unnecessary and may be altogether omitted.

XV.—*Obituary.*

Mr. W. H. Hudleston.

It is but three months since the four surviving Original Members still on the List of the B.O.U. were presented with Commemorative Medals, and already one has passed from our midst, for we have now to announce, with the greatest regret, the death of Mr. W. H. Hudleston. The following paragraphs are extracted from the full "Life" which he himself wrote last year for the Jubilee Supplement:—

Previous to April 1867 Hudleston was known as Wilfrid Hudleston Simpson, and it was whilst bearing this name that most of his ornithological work was done. He was born at York on the 2nd June, 1828, and spent the years from 1838 to 1843 at the Collegiate School in that city, now St. Peter's School. Those were the days before scientific farming had reduced our fences, and there was a fine field for the bird's-nester.

In 1843 young Simpson went to Uppingham School, being then 15 years of age. Here, for three successive seasons, he indulged in his favourite pursuit in a locality which at that time was certainly favourable to ornithological rambles. Kites had only just disappeared from those large woods which were remnants of the old forest of Rockingham, but some of the local eggs were still preserved in Bell's collection.

The scene now shifts to Cambridge, when the glories of Fenland were already in a transition state. The seasons of 1847, 1848, and 1849 are those with which we have to deal. Simpson spent no small part of his time during the spring months in fen localities, and the area of his operations extended from Whittlesey Mere, on the west, to the fens of the Little Ouse, on the borders of Norfolk and Suffolk. He was just in time to find some of the Harriers breeding, and notably Montagu's Harrier, which then nested regularly in Feltwell Fen in company with the Short-eared Owl.

The year 1848 was in many ways a memorable one. It was in that year that Simpson first made the acquaintance of Alfred Newton, who had just come up as an undergraduate to Magdalene College, Cambridge. The similarity of their tastes soon made them firm friends, though Newton did not then accompany Simpson in any of his excursions. His principal comrade at this time was a brother Johnian named James E. Law, who had shared in his birds'-nesting experiences at Uppingham, and who ultimately married his eldest sister. When the May term was over, Simpson and Law made a short tour in Northumberland, the programme including a complete day at the Farne Islands on the 15th of June. Sandwich Terns were particularly plentiful in those days, but the eggs of the few Roseate Terns visible were only doubtfully identified. The same party had a delightful day on Cheviot a little later, when they found that the Merlin and Dunlin had already hatched off; but a complete clutch of the Golden Plover was secured from the flat and hassocky summit of the mountain. On the 7th July following, Simpson, who was then visiting his relations in Cumberland, secured a nest of the Dotterel, with its complement of three eggs, on the summit of Robinson Fell near Buttermere.

Simpson took his B.A. degree in January 1850, and forthwith went to reside in London, where he was called to the Bar in 1853. Those years were not prolific in ornithological pursuits, although during a short fishing-trip to the north-west of Ireland, in May 1853, he and his old College chum James Law had the good fortune to secure nests of the Sea-Eagle and Peregrine Falcon from the cliffs of Horn Head in Donegal.

He again took up ornithology seriously in the spring of 1855, and this time at the instance of Alfred Newton, with whom he had remained in constant touch ever since their first meeting at Cambridge in 1848. The two comrades started from Hull late in May, and, owing to most unseasonable weather, missed the steamer connexion along the Norwegian coast, and so were taken on to Christiania, whence they proceeded overland in a great hurry to Trondhjem, just in time to catch the coasting-steamer that was to take them on to Hammerfest.

When, after an interval of ten days, the rolling 'Gyller' at length arrived in port, two Englishmen, Scott and Torr, were on board, and a merry party of four rounded the Nordkyn together, and ultimately reached Vadsö in the Varanger Fjord, where the hero of Lapland ornithology, John Wolley, shortly made his appearance, fresh from a fortnight's excursion up the Pasvig, in Russian Finland, and this, too, during the Crimean War. The party of three ornithologists, being now complete, lost no time in making their way up the Varanger Fjord, and thence to the valley of the Tana, and so round by the Tana Fjord to Vadsö again. There is no need for any ornithological details, as these may be gathered from the writings of Wolley and Newton, and also from the pages of 'Hewitson.' The same remark applies to the still more prolific region of Central Lapland, at Muoniovara, for instance, which Wolley had made his home. The 'Ootheca Wolleyana' should especially be consulted, for there each egg has its history.

The return journey commenced towards the middle of July, when the three friends committed themselves once more to the rolling 'Gyller,' and were landed at a place on the Lyngen Fjord, whence they made their way across the watershed into Swedish Lapland, and so in boats down the Muonio River to Muoniovara itself.

The homeward journey began on the 8th of September, and the party reached Hull early in October, by way of Haparanda, Stockholm, and Gothenburg.

In the spring of 1856 John Wolley induced Simpson to join him in an expedition to the Isle of Öland, in the Baltic, in quest of the Little Gull, supposed to breed there, but this turned out to be the Black-headed Gull, and so far the expedition was a failure. Nevertheless, a most interesting campaign was carried on in the watery isle and adjacent coast of Sweden—some of the results being recorded in 'The Ibis' (see "Narrative of the Discovery of some Nests of the Black Woodpecker in Sweden," Ibis, 1859, p. 264) and in the 'Ootheca Wolleyana.'

Probably the most enjoyable excursion in which Simpson shared was that undertaken by Tristram and Salvin in the year 1857. The introduction was effected through the good offices of Alfred Newton; and Salvin and Simpson started together from London early in February to join Tristram, already in North Africa. The three met at Tunis, and some time was spent in that highly interesting country, where archæology and ornithology were alternately in the ascendant.

At the latter end of March the "caravan" started for Algeria, *viâ* the famous valley of Roman ruins, to Kef, and thence over the somewhat lawless borderland to Souk-harras in the province of Constantine. From the day of their leaving Souk-harras, very early in April, to the day of their arrival at Constantine, towards the end of June, the party dwelt constantly in tents, and travelled on horseback from place to place. From an ornithological point of view the country was almost a virgin one, and especially the upper valley of the Medjerdah, where operations first commenced. The country was alive with birds of prey, from the stately Griffon to the querulous Black Kite, and other birds were equally interesting and demonstrative. The wretched "Colon" had not yet potted everything, and there were even lions, long since extinct, for the followers of Jules Gerard to pursue.

The early part of 1858 presents no particular features of interest. Simpson passed a few weeks in Argyllshire, looking out for shootings, and while thus engaged secured nests of the Buzzard and Hen-Harrier.

When the British Ornithologists' Union was formally founded at Cambridge in November 1858, Simpson and F. D. Godman, with others of the brotherhood, stayed for some little time at the Bull Hotel, in order to take part in the proceedings.

Simpson's latest expeditions in the pursuit of ornithology took place during the years 1859 and 1860, chiefly in Greece, but also to a less extent in that part of Turkey known as the Dobrudscha, which has since become a portion of the State of Rumania. In Greece he had the advantage of the company of Dr. Krüper during part of the time, especially in the neighbourhood of Mesolonghi, where some interesting captures were made. He was able to study the country both in its summer and its winter aspect, and the results of his experiences are recorded in some of the earlier volumes of 'The Ibis.'

Shortly after his return from Turkey, viz. in June 1860, he attended the memorable meeting of the British Association at Oxford, where there was a considerable gathering of original members of the B. O. U. The general results of that meeting are a matter of history, but the more immediate result as regards the ornithologists present was to confirm their leaning towards the doctrine of Evolution, then for the first time brought to the notice of the public.

Simpson made a trip to Switzerland in the spring of 1861, and several interesting finds were the result, such as the Golden Eagle from Ben Laoghal, the Grey-lag Goose from Loch Laoghal, and two or three complete nests of the Greenshank—substantially the last eggs he took.

Henceforth he determined to devote his energies to something more practical, and, as a preliminary course, to undertake his own re-education, so as to be less dependent on classical knowledge only. With this object in view, in the winter of 1862–63, he studied chemistry under Playfair at Edinburgh, where he obtained the University medal in that branch of science. Subsequently, for three successive winters, he continued those studies at the Royal College of Chemistry in London, and ultimately set up his own laboratory in Chelsea, where he was able to conduct mineral analysis on his own account.

All this work was so much training for the main object he had in view, viz. to become a practical geologist. In this connexion, during a short trip to Switzerland in the autumn of 1866, he met Marshall Hall, through whom he obtained introductions to several well-known geologists. From such men as Morris, Etheridge, and Blake, to mention no others, he received instruction in palæontology, and thus early in the seventies he was sufficiently advanced to be able to contribute to the literature of his favourite study. He became a Fellow of the Geological Society in May 1867, just a fortnight before he changed his name to Hudleston.

From the year 1872 onwards he continued to write papers on various geological subjects, while he also participated in the management of the several societies with which he was connected. It is probable that he was the only person who has been Secretary and President, both of the Geologists' Association and of the Geological Society. In 1897 he was awarded the Wollaston Medal; in 1898 he was President of Section C at the Bristol meeting of the British Association; and so recently as last summer (1908) he was deputed by the Council to represent the Geological Society of London at the Darwin-Wallace Jubilee meeting of the Linnean Society. He was elected a Fellow of the Royal Society in 1884.

Mr. Hudleston died at his residence, West Holme, Wareham, on January 29th, 1909.

XVI.—*Notices of recent Ornithological Publications.*

[Continued from p. 188.]

25. '*Annals of Scottish Natural History.*'

[The Annals of Scottish Natural History. October 1908 and January 1909.]

In the first of these numbers Mr. J. Paterson continues his able Report on Scottish Ornithology for 1907, and in it we again find matter of the greatest interest. *Linota rostrata*, *Pyrrhula erythrina*, *Emberiza melanocephala*, *E. pusilla*, *E. hortulana*, *Turtur communis*, *Totanus ochropus*, and other species of less importance are recorded on Mr. W. E. Clarke's authority from Fair Isle, while it may be noted that *Corvus corone* has also occurred there; an early nest of *Phalacrocorax graculus* is noticed from Orkney (Feb. 24th); two pairs of *Somateria mollissima* remained from April to August on the Solway Firth; a pair of *Œdicnemus scolopax* are reported from Lerwick on May 20th; *Fringilla montifringilla* and *Scolopax rusticula* (*cf.* Annals, 1907, p. 144) seem to have been unusually plentiful in Scotland; and, finally, forty-two nests of *Megalestris catarrhactes* were counted in the breeding-season at Hermaness in Unst.

A short paper by Mr. W. Evans on the origin of the present colony of Great Spotted Woodpeckers in Scotland, in which the author inclines to the view of an English rather than a Scandinavian source of supply, is preceded by an article on the same species by Mr. Harvie-Brown, who elaborates and maps out for us with his usual accuracy the gradual extension of the bird's range since 1841 or 1851. In the map present summer-records and records of breeding, ancient records, and those of winter are duly represented by various signs or dates, so that we can take in the facts at a glance, and see for ourselves how distinct this new colony is from the old, whose breeding area lay to the north of the Grampians. In the letterpress the gradual extension northward and southward since the first nest was found in 1887 at Duns, in Berwickshire, is carefully traced, while a specimen of the schedules used in the investigation is printed for the guidance of others. The author furthermore discusses the route by which this species is likely to spread still further to the north, and ventures to prophecy that it will be by way of the Dee.

Mr. H. B. Watt follows with a list of Scottish Heronries, past and present, but we are afraid that he has omitted to consult certain books or papers on local avifauna; Muirhead's 'Birds of Berwickshire' and the articles in the 'History of the Berwickshire Naturalists' Club' would, for instance, have enabled him to be more accurate with regard to some of the Herouries of "Tweed," while the writer does not distinguish accidental cases of the breeding of a single pair from a Heronry proper.

In the January number we find three consecutive ornithological papers. Mr. Eagle Clarke reports the occurrence of *Phylloscopus borealis* at Fair Isle, the first record for Britain, and the second for Western Europe; the Duchess of Bedford writes a couple of pages of Bird Notes from the Outer Hebrides, with notices of *Muscicapa parva* and *Ruticilla titys*; and Miss E. Baxter continues her useful records from the Isle of May, and gives details of her observations and those of Mr. Maccuish in 1908. Bluethroats, Yellow-browed Warblers, Pied Flycatchers, Bramblings, one Scarlet Grosbeak, and one Wryneck appear to be the most notable of the species met with.

In the Zoological Notes we wish to draw special attention to the correction of a statement as to the Lesser Whitethroat nesting in the "Tay" area, and to the records of the Blue-headed Wagtail, Hawfinch, and Gadwall.

26. '*Aquila*,' 1905–1907 * (vols. xii.–xiv.).

[Aquila: Zeitschrift für Ornithologie. Redact. Otto Herman. Tom. xii.–xiv. Budapest, 1905–7.]

'Aquila,' as we all know, is the scientific organ of the "Officium Hungaricum Ornithologicum," and the yearly volume is issued at Budapest with unfailing regularity. We have now before us those for three years—namely, 1905, 1906, 1907. The Journal is naturally for the most part devoted to matters pertaining to the Birds of the Kingdom of Hungary; but it should be carefully studied by all who are interested in the Ornithology of the Western Palæarctic Region, as it contains a mass of information about species little known in the minute fragment of Europe which we inhabit. Bird-migration in Hungary is specially studied by a host of observers, and reports on this subject will be found in every volume of 'Aquila.' In that for 1905 is contained an excellent account by the late Prof. Newton of the three Naumanns and of the festival held in their honour at Cothen, when the "Naumann-denkmal" was inaugurated. This is followed by a report on the "Proceedings" of the International Ornithological Congress of 1905. We may also call attention to Mr. Herman's important essay on *Geronticus eremita* and its former existence in Europe in vol. xiv. (1907).

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* See 'The Ibis,' 1905, p. 269.

27. '*The Auk.*'

[The Auk. A Quarterly Journal of Ornithology. Vol. xxv. Nos. 2, 3, 4 (April–October 1908).]

The April number of our American contemporary begins with a long article by Mr. C. C. Adams on "The Ecological Succession of Birds," a title somewhat in the nature of a "hard saying" for the multitude. The author considers it high time that more attention was devoted to the nature of the birds' surroundings, and to the effect of the permanence or change of those surroundings on the birds themselves. He also thinks that present works refer too exclusively to political or other convenient "areas," which are often of a highly composite nature—hill, moor, marsh, and so forth. He speaks for his own country, of course, and not for Britain, where we are deluged with books on the birds of the marsh, the birds of the shore, and the like; but we quite agree with him in his estimate of the importance of a bird's environment, and the changes which that environment makes in the creature itself, if indeed it does not necessitate its departure.

In the April and October numbers, Mr. Ruthven Deane gives details of a letter of Audubon to his family, of his letters of introduction carried on his Missouri River Expedition, and of the fate of the copperplates of the folio edition of the 'Birds of America,' coupled with a sketch of the engravers. Mr. Deane is a well-known authority on such matters, and we are glad to read the articles from his pen referring to the great American Ornithologist, and also that by Dr. C. H. Merriam on the "King Cameos of Audubon" in the October number.

Next we may allude to articles by Dr. J. A. Allen on the vexed question of *Strix* v. *Aluco* (wherein his conclusions agree with those of Prof. Newton and Dr. Coues), and on *Columbina* v. *Chamæpelia*; while these serve to draw our special attention to the Fourteenth Supplement to the A. O. U. Check-List given in the July number.

The chief distributional paper is that of Messrs. Beyer, Allison, and Kopman on the birds of Louisiana (Pt. IV. April, Pt. V. October), a most useful piece of work and far more than a mere list of species. In the April number we have also articles by Mr. W. A. Dawson on the Avifauna of the Olympiades (a name he proposes for three reserves among the islands off the West Coast of Washington State), by Mr. H. G. Smith on that of Colorado, by Mr. E. S. Woodruff on that of Shannon and Carter Counties, Missouri; in July others by Mr. R. H. Harlow on that of Eastern Pennsylvania and by Mr. C. J. Pennock on that of Delaware; in October by Mr. A. A. Saunders on that of Central Alabama, by Mr. J. M. Edson on that of the Bellingham Bay Region in the north-west of the United States, by Mr. E. Thompson Seton on that of Manitoba, by Mr. N. Hollister on that of the Needles Region, California, and by Mr. A. B. Reagan on that of the Rosebud Indian Reservation, South Dakota.

Returning to the April number we find Mr. Ruthven Deane again to the fore with a short paper on the Passenger Pigeon in confinement (*cf.* 'Auk,' xiii. p. 234) and the probability of its immediate extinction; in July Mr. E. S. Cameron gives us the benefit of his experiences with regard to the Golden Eagle in Montana, Mr. J. H. Riley discusses the broad-winged Hawks of the West Indies, and describes as a new subspecies *Buteo platypterus insulicola*, Mr. E. J. Court writes on the Treganza Blue Heron (with two plates), Mr. F. H. Allen on *Larus kumlieni* and other northern Gulls at Boston, Mr. J. H. Fleming on the destruction of *Olor columbianus* at Niagara, and Mr. A. H. Clark on the Macaw of Dominica (which he provisionally terms *Ara atwoodi*). The last-named paper should be read in connexion with the review of Mr. Rothschild's 'Extinct Birds' in the April number. Finally, in October, Mr. E. S. Cameron describes the changes of plumage in *Buteo swainsoni.*

28. '*The Avicultural Magazine.*'

[Avicultural Magazine. The Journal of the Avicultural Society. New Series. Vol. vi. Nos. 11, 12, Vol. vii. Nos. 1–5 (Sept. 1908–March 1909.)]

The Editor of this Magazine, Mr. D. Seth-Smith, has the first claim upon our attention for his attractive article on his visit to Australia on behalf of the Zoological Society. This article is continued from September to March, and gives an account of his sojourn in West Australia, with trips to the mining centre of Kalgoorlie, the Forest region, and the Mammoth cave; from Freemantle he proceeded by sea to Adelaide, and thence by train to Melbourne, the Zoological Gardens at both of these places being a great attraction, while at the latter he took a further trip to the Penton Hills. To an aviculturist the whole story is especially interesting on account of the large number of Australian species of birds that may be kept in confinement.

The allusion to Zoological Gardens leads naturally to the mention of a paper in November by Mr. R. I. Pocock on the breeding-habits of the genus *Crax*, as exemplified in the mating of a female of *C. hecki* with a male of *C. globicera* at Regent's Park. The nest of twigs in a tree built by the male, the period of incubation by the female, the two white eggs, the remarkable precocity of the young and the method of feeding them are all duly chronicled, and give much information to the ornithologist.

Success in breeding rare species in captivity seems to be now almost more the rule than the exception, a fact which must be most gratifying to the Society and on which we congratulate it most heartily. In his well-known aviaries at Gooilust, Mr. F. E. Blaauw has reared many rare species, among which *Gallus sonnerati* may be particularized (Nov.); and at Woburn the Duchess of Bedford has been equally successful, especially with several species of Cranes (Sept.).

In February, Mr. W. H. St. Quintin gives us a coloured plate of the Waxwing and another of its egg, while relating his unfortunate failure to rear the young that were hatched in 1903; in March he follows this up with notes on the breeding of the Eider and other Ducks, Tragopans, Capercaillies, and so forth at Scampston. In October Mr. G. H. Gurney, a new member, signalizes his advent by a good paper on *Centropus superciliosus*, brought by him from British East Africa, which is preceded by a shorter notice in October on the breeding of *Aramides ypecaha* in his aviaries.

In October, November, and March those constant contributors Mr. H. D. Astley and Mr. R. Phillipps join forces to write of *Agapornis nigrigenis* (col. pl.), and give an excellent account of its breeding, wherein we wish to call special attention to the habit noticed in some members of the genus of carrying nesting-material among the feathers so as to leave the bill free for climbing purposes. In September, October, January, and March, Mr. Astley also writes on the nesting of *Turacus corythaix*, on rare birds from New Guinea (especially the Paradise-birds in Mrs. Johnstone's collection), on certain Thrushes, and on Bower-birds. In September, moreover, Mr. E. J. Brooks gives an account of the breeding in captivity of *Artamus superciliosus*, and Mr. Williams of that of *Conurus æruginosus*; while Mr. C. B. Smith has furnished a series of papers in the various numbers on the display of the Monal Pheasant, on the Rock Ptarmigan and Harlequin Duck, and the nesting of *Nothoprocta maculosa* and *Francolinus vulgaris* on his premises.

In November and December Mrs. Johnstone and Sir William Ingram are once more to the fore with articles on Paradise-birds, the former writing on *Cicinnurus regius*, of which she possessed two males and three females (col. pl.), and the latter on *Paradisea rudolphi* brought from New Guinea by Messrs. Horsbrugh and Stalker. In October Mr. T. H. Newman describes his successful attempt at breeding *Geophaps scripta*.

Lack of space forbids us to give details of all the papers, but Dr. Butler should be mentioned as contributing two in January and February, and Capt. Perreau contributes "Some Notes on Indian Ornithology" to the same numbers; while Mr. B. R. Horsbrugh gives in September an account of the breeding of *Turnix lepurana* as observed by him in South Africa.

29. *Brogger on Birds' Bones from the Norwegian Kitchen-middens.*

[Vistefundet en ældre stenalders kjökkenmödding fra Jæderen. Av A. W. Brogger. Stavanger, 1908. 102 pp., 5 pls.]

At Viste, in the parish of Rendeberg, on the south-eastern coast of Norway, not far from Stavanger, the remains of an ancient dwelling-house of the older neolithic stone-age were discovered in the autumn of 1907. This was accompanied by a large kitchen-midden, containing masses of shells of the sea-mollusks which had been consumed for food. But with these were also exhumed, after a careful search, remains of numerous other animals—Mammals, Birds, and Fishes. The bird-bones have been examined by our Foreign Member, Dr. Winge, who has kindly supplied us with a copy of this interesting memoir. They are referred to 27 species, nearly all well-known inhabitants of the adjacent sea-coast. But amongst them are also numerous fragments of the bones of the Great Auk (*Alca impennis*), which prove that this bird was used there in past ages as a regular article of food.

The memoir is well illustrated by five lithographic plates and numerous text-figures.

30. *Carter on a supposed new Grass-Wren.*

[Description of a supposed new Grass-Wren. By T. Carter, M.B.O.U. Vict. Nat. xxv. p. 86.]

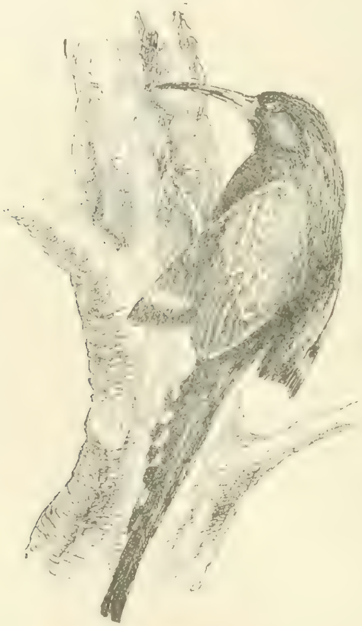
Mr. Carter describes *Amytis varia* as a new species, comparable with *A. gigantura* Milligan, Vict. Nat. xviii. p. 27, but probably different. It is, we suppose, from West Australia, but the exact locality is not stated.

31. *Chapman's 'On Safari.'*

[On Safari. Big-Game Hunting in British East Africa, with Studies in Bird-life. By Abel Chapman. With 170 Illustrations. London: Edward Arnold, 1908. 1 vol., 8vo.]

"Big-Game," we must allow, is the principal theme of Mr. Chapman's volume, but the references to Birds and the text-figures which illustrate them, taken from the author's sketches, are so numerous and so attractive that we are quite justified in calling it a Bird-book also. "Safari" is a new word, and, we are told, "has no precise equivalent in our British tongue." Yet, being in daily use in East Africa and apparently meaning a "hunting-expedition after big game," it is a convenient expression which Mr. Chapman has taken leave to introduce into "our common language." The author, on his three trips, entered British East Africa—"probably the most glorious hunting-field still extant, and certainly the most accessible"—by the usual steam-route to Mombasa, and by the so-called "Uganda Railway," which, however, does not touch Uganda at all. He went straight up into the great "equatorial trench," and encamped at various places in the highland district which shuts off Lake Victoria from the Eastern Ocean. On each occasion he spent many happy days in pursuit of big game in that hunter's paradise. We will not follow him into his account of the slaughter of many mammals, which are not only fully described, but splendidly illustrated by well-drawn pictures taken from life, but we must at once call attention to his frequent remarks on the bird-life of the country, to which, as a well-known Member of the B. O. U., he was bound to attend. These remarks are scattered throughout the volume, and relate to Sun-birds, Louries, Whydahs, Social Weavers, Nightjars, Rollers, Shrikes, Touracos, and a host of other forms which the luxuriant Avifauna of Tropical Africa possesses in such abundance. Although there are numerous scientific articles on the Birds of British East Africa, few ornithologists (except perhaps Mr. F. J. Jackson) have given us such good field-notes. Much may be learned from what Mr. Chapman writes on the subject, and much from the excellent little sketches which he introduces into his text. It has been stated elsewhere that the Wood-Hoopoe (*Irrisor*) climbs trees like a Creeper, but this has never been so clearly shown as in Mr. Chapman's drawing (p. 243), which we have kindly been allowed to reproduce.

Text-fig. 8.



Irrisor erythrorhynchus.

The appendix of "rough veld-notes on bird-life in British East Africa," which concludes the volume, is, in our opinion, by no means so "valueless to the scientific ornithologist" as the author supposes. It presents us with a good general idea of the varied forms of Birds characteristic of this favoured portion of the Ethiopian Region, and contains many interesting observations on their habits. We have read Mr. Chapman's adventures "on Safari" with pleasure and interest, and are sure that many other Members of our Union will do the same.

32. *Collett on the Great Auk in Norway.*

[Nogle Bemærkninger om *Alca impennis* i Norge. Af R. Collett. Christiania Vidensk.-Selsk. Forhandl. 1907, No. 8. Christiania, 1907.]

Dr. Collett here gives a sketch of our knowledge of the Great Auk in Norway, beginning with Linnæus, who, in his 'Fauna Suecica' in 1746, cautiously says "*habitat in mari Norvegico, rarius!*" He then proceeds to the recent discovery of its remains in kitchen-middens on the Norwegian coast. There is only one complete stuffed specimen of the bird in any of the Norwegian museums, of which an uncoloured plate is given. The bones from the kitchen-middens now in the Museum at Christiania are likewise described and figured; they consist of fragments of the humerus and coracoid.

Dr. Collett moreover describes a considerable series of the bones of the Great Auk which were exhumed by P. Stuwitz in 1842 on Funk Island, north of Newfoundland, and are also in the Christiania Museum.

33. *Dresser on Palæarctic Birds' Eggs.*

[Eggs of the Birds of Europe, including all the Species inhabiting the Western Palæarctic Area. By H. E. Dresser. Parts XIII., XIV., XV., XVI.]

These four parts of Mr. Dresser's work treat of the *Corvidæ, Cypselidæ, Caprimulgidæ, Picidæ, Alcedinidæ, Coraciidæ, Meropidæ, Upupidæ, Cuculidæ, Strigidæ, Phalacrocoracidæ, Sulidæ, Pelecanidæ, Ardeidæ, Ciconiidæ, Ibididæ* (with *Platalea*), *Phœnicopteridæ,* and *Anatidæ.* The eggs figured are those of members of the same families, with the addition of *Phasianidæ, Tetraonidæ, Rallidæ, Gruidæ,* and *Otididæ.* The plates, as a whole, are even better than their precursors, and the three-colour process of photography is fully justifying its use for the representation of Oological specimens. The letterpress contains much interesting matter, especially as regards those species whose homes lie to the eastward, and is in most cases sufficiently full as well as accurate. But the author does not appear to have brought his information quite up to date with regard to the distribution of species in Britain, or, perhaps we should say, might advantageously give more ample details of that distribution in cases where fresh information has been acquired by those so carefully working at the British Avifauna.

The Little Owl has now a far more extended range in England than that here assigned to it, and Bewick's Swan is numerous every winter in parts of the north-west of Scotland, and not only in some winters. Further particulars, moreover, might be added in the case of such Ducks as the Gadwall, Shoveler, and Wigeon. Mr. Dresser seems to imply that the Shoveler's nesting in Scotland is a matter of doubt, though it is known to do so in several parts, and the woodcut given depicts a nest from Fifeshire. Again, the Gannet is said to breed on "Sulisgeir and Suliskerry." Now Suliskerry is a flat island (as a "skerry" always is), and no Gannet would think of nesting there. As is well known to residents in Northern Scotland, and may be gathered from such works as 'A Vertebrate Fauna of the Orkney Islands,' p. 160, the bird only breeds on "Stack" (or East Sulisgeir) and West Sulisgeir. The Stack is an almost inaccessible precipitous island and has no connexion whatever with "Skerry."

With a few such exceptions the work is excellent, and gives us much information as to the new subspecies that have recently been proposed, though not invariably accepted by our author. It will be noticed that Mr. Dresser no longer maintains the specific title of *Corvus leptonyx* for Irby's Raven (*C. tingitanus*) and that he upholds the specific distinctness of the Grey-backed and Carrion Crows, while he appears to doubt the fact of the egg of the Cuckoo shewing a resemblance to that of the foster-parent, therein differing from the great majority of ornithologists.

A printer's error of some importance is to be found under

Caprimulgus ruficollis, where "Kellingworth" should be "Killingworth."

34. *Giglioli on Italian Birds.*

[Avifauna Italica, nuovo Elenco Sistematico delle Specie di Uccelli, stationarie, di Passaggio o di accidentale Comparsa in Italia; coi nomi volgari, colla loro distribuzione geografica, con notizie intorno alla loro Biologia, ed un esame critico delle Variazioni e delle cosidette sotto specie. Dal Enrico Hillyer Giglioli. Florence, 1907. Pp. i–xxiv, 1–784.]

In the year 1886 Professor Giglioli earned the gratitude of the ornithological world by compiling his first 'Avifauna Italica,' consequent upon a shorter memoir in the Roman Annals of Agriculture. He now gives us, in what may be termed a second edition, the results of his labours from 1886 to the present time, pending the completion of his illustrated folio work, 'Iconografia dell' Avifauna Italica.' Much new information has been amassed in these twenty years, and the aid of the Ministers of Public Works and Marine has been invoked, and not in vain, to the assistance of Ornithologists, chiefly with regard to the Migration and the Distribution of species. Further statistics are, as the author tells us, still needed; but we have here a very satisfactory account of the birds of the Kingdom of Italy.

Proper attention is paid to the new subspecies or species that have occurred in the country, more especially where "neogenesis," or the birth of new forms (e. g. *Athene chiarardiæ*), has been asserted; due weight is also given to the question of geographical races.

Several of the specific names used are not those with which we are most familiar, but it would be impossible in a short space to discuss their validity.

We must, in conclusion, draw particular attention to the excellent Introduction, which gives an account of the progress of Ornithology in Italy and a statement of the Professor's creed. He declares himself an unsparing opponent of the fashion of founding new species or subspecies on very slight, or mere individual, characters, and considers that such characters are unfortunately often confounded with those that are truly specific, while he also inveighs against the unnecessary multiplication of synonyms and the use of tautonyms, and reminds us, as is very necessary nowadays, that nomenclature in Zoology is a means and not an end. Given proper characteristics, he is as ready as another to propose a new species: he is neither a "lumper" nor a "splitter."

35. *The Grouse Disease Inquiry.*

[Board of Agriculture and Fisheries. Grouse Disease Inquiry. Interim Report. London, 1908.]

We have lately received a copy of this Report, the evidence in which tends to certain conclusions, though the Final Report alone will justify our adherence to them as absolute facts. It appears that there may be two forms of Grouse Disease: firstly, the chronic, wasting, and generally fatal form, where the parasitic worms normal to the bird become particularly harmful in its weakened condition; and secondly, the acute form, considered by Klein to be an infectious pneumonia connected with a special organism. As, however, this organism is also found in healthy Grouse, and individuals said to be attacked by acute disease in their full vigour have proved to be in an emaciated condition, Klein's views are open to doubt, and the existence of a second form of disease is held to be not proved at present.

One fact, however, has been made abundantly clear from the evidence of owners of moors, keepers, and local correspondents in touch with the appointed "head-centres": namely, that there is an intimate connexion between health and the food-supply, which consists, as is well known, chiefly, though not entirely, of the shoots of *Calluna* (Ling). Overstocking a moor simply means keeping more birds than the food-supply can maintain. Minor points to which attention is drawn are that Grouse do not eat frosted heather, and that the cocks succumb chiefly in spring and the hens in autumn, when the sexes are respectively at their weakest.

It would not be fair to judge the Commission on the strength of the work of the first two and a half years alone, and we must await the Final Report before definitely criticizing; but certainly a good beginning has been made by studying the bird in its normal state and the conditions on which the health of moors depends; while beyond this Mr. E. A. Wilson reports on the specimens examined and their crop-contents, Mr. A. E. Shipley on the Parasites, Mr. J. C. Fryer on the Insect Life of Grouse Moors, Mr. H. Hammond Smith on the observation-area established at Frimley, in Surrey, and Mr. R. H. Rastall on grits found in the gizzards of Game Birds.

Full discussions of the Bacteriology, the Causes of Mortality, the Economic Value of Grouse Shootings, and especially the subject of Heather-burning, so important a factor in the health of a moor, have been held over until the Final Report stage.

36. *'Irish Naturalist.'*

[The Irish Naturalist. A Monthly Journal of General Irish Natural History. January to December 1908.]

Comparatively few papers on Ornithology are to be found in the pages of the 'Irish Naturalist' for last year, but in April Dr. Scharff writes on the Determination of Sex in the Woodcock, in June Mr. A. Williams discusses Bird-Protection in Co. Dublin, followed by an article in September on Bird Life in Dublin Bay, and in October Prof. Patten gives an accout of his "Rambles on Achill Island."

Unfortunately Dr. Scharff's careful investigations were fruitless, and no reliable distinguishing character could be discovered between the male and female Woodcock. Mr. Williams's papers will be read with interest, and the titles speak for themselves. Prof. Patten spent more than a fortnight in September in Achill, and occupied himself in watching and photographing the interesting birds he met with, but he does not furnish us with any new records.

In the "Notes" we may call attention to accounts of the overland flight of Sea-birds by Messrs. Praeger, Harvie-Brown, and Ussher; to the first occurrence of Richard's Pipit in Ireland (p. 59); to observations on Great Shearwaters and Fulmars off the coast by Mr. Ussher; to notices of migrants at Rockabill by Mr. Barrington, and of Stock Doves in Wexford by Major Barrett-Hamilton.

The November number is devoted to a full account of the Dublin Meeting of the British Association.

37. *McGregor on Philippine Birds.*

[Notes on a Collection of Birds from Siquijor, Philippine Islands. By Richard C. McGregor. Philipp. Journ. of Science, iii. no. 6, Sept. 1908.]

Our American friends continue their excellent work in the Philippines. The establishment of a "Biological Laboratory" and of a "Journal of Science" so soon after their arrival on the scene are feats that may well put other Governments to shame. As regards Birds at least they have an engrossing subject before them. The preparation of an 'Avifauna Philippinensis,' and the correct working out of the numerous representative species in the different islands, will be a task of much labour but of intense interest.

In the present paper, Mr. McGregor, who is now the leading ornithologist at Manila, gives us an account of a collection from the coral rock of Siquijor, a little island lying close to Negros, and apparently comparatively recently provided with bird-life. Three species, however, have had time to develop into well-marked representatives—namely, *Dicæum besti*, *Loriculus siquijorensis*, and *Iole siquijorensis*. Mr. McGregor enumerates 87 species from this island, thus adding 9 to the list given by Worcester and Bourns in 1898*. Among these is *Acanthopneuste borealis* (Blasius), of which two specimens were obtained.

38. *Mair's 'Mackenzie Basin.'*

[Through the Mackenzie Basin, a Narrative of the Athabasca and Peace River Treaty Expedition of 1899, and Notes on the Birds and Mammals of Northern Canada, by Roderick MacFarlane. 1 vol., 8vo. 494 pp. London: Simpkin, Marshall, & Co., 1908.]

This volume contains in the first place the narrative of an expedition sent into the "Great Mackenzie Basin" in 1899, in order to come to terms with the native Indians as to the surrender of their land-rights to the Canadian Government. In the second half the valuable field-notes made by the author's friend, Roderick MacFarlane, for many years a Chief Factor of the Hudson Bay Company, are reprinted. They have already appeared in the 'Proceedings of the U.S. National Museum' (see 'Ibis,' 1892, p. 335), but are well worthy of repetition. The specimens collected appear to have gone to Washington, not to Ottawa, which would have been a more appropriate destination for them.

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* Pr. U.S. Nat. Mus. xx. p. 564.

39. *Martens on Magellanic Birds.*

[Ergebnisse der Hamburger Magalhaenischen Sammelreise, 1892–3. Herausgegeben vom naturhistorischen Museum zu Hamburg. Vol. I. Hamburg, 1896–1907. Vögel bearbeitet von G. H. Martens (Hamburg).]

Among the articles on the results of the Magellanic Collecting-Expedition sent out by the City of Hamburg in 1902–3, under the leadership of Dr. Michaelsen, is a chapter on Birds, prepared by Herr G. H. Martens, of Hamburg. The collection made on this occasion is stated to have consisted of 60 specimens, referable to 42 species. The examination of these specimens, which were placed in the Natural History Museum of Hamburg, did not result in any new discoveries, but this, considering the small size of the collection and the well-known features of the Avifauna of the country visited, does not seem very wonderful.

Herr Martens has consoled himself for his disappointment at the meagre results (as regards birds) of the Magellanic Collecting-Expedition by compiling a List of the birds of the South Polar area, which, according to his investigations, embraces about 299 species referable to 176 genera. But we think that he has been unwise to include in his List the land-birds of the islands adjoining New Zealand (Chatham Island, Auckland Islands, &c.). The sea-birds, it is true, are nearly the same all round the South Polar seas; but the land-birds of the New Zealand Islands are quite distinct, and belong entirely to the Australian Region. The List, therefore, presents rather an incongruous mixture of Neotropical and Australian forms of bird-life.

40. *Martorelli on the Parrots in the University of Naples.*

[Elenco dei Papagalli del Museo Zoologico Universitario di Napoli con note ed illustrazioni. Dal Prof. Giacinto Martorelli. Ann. Mus. Zool. Univers. Napoli, n. s. ii. No. 4 (1908).]

At the request of Prof. Monticelli, the Director, Prof. Martorelli has undertaken the arrangement of the fine series of Psittacidæ represented in the collection of the Royal Museum of Naples. He wisely follows Count Salvadori's nomenclature and arrangement, and gives a few notes on the rarities. *Pionus reichenowi* of Heine is figured.

41. *Mullens on the Bibliography of British Birds.*

[A List of Books relating to British Birds, published before the Year 1815, from the Library of W. H. Mullens, M.A., LL.M., F.R.S. Exhibited at the Corporation Museum, Hastings, during June 1906. With Seven Plates. Hastings and St. Leonard's Nat. Hist. Soc. Occasional Publications, No. 3. Reprinted, with additions and corrections.]

Mr. Mullens has kindly sent us a copy of this pamphlet, which he hopes to make the precursor of a larger work on the Bibliography of British Birds. Such a work was originally planned by Mr. W. R. Butterfield, who, in a short preface, announces that he has withdrawn in favour of Mr. Mullens; while, from the extent of the latter's library, it is evident that a better successor could not have been selected. The word "additions" on the cover of the pamphlet leaves us a little doubtful whether the books recorded are *all* in the author's possession, but we believe that such is the case. We are by no means desirous of criticizing so useful a list, but wish to suggest the addition, in the larger work projected, of more information as to the writers, their birthplace, works, and so forth. Mr. Mullens will, no doubt, also include books that he may not himself possess, and notes on writers on British Birds quoted by such authers as Aldrovandi (*e. g.*, Elliot & Wotton); certainly he should add accounts of the later editions of White's 'Natural History and Antiquities of Selborne,' which he disposes of at present in one line.

In connexion with the work of John Caius, Evans's translation in the Appendix to 'Turner on Birds' is not of the whole, but only of extracts.

42. *Penard on the Birds of Guiana.*

[De Vogels van Guyana (Surinam, Cayenne en Demerara). Door **Frederik Paul Penard en Arthur Philip Penard.** 1 vol., 8vo. Paramaribo. London: Kegan Paul & Co. 587 pp.]

This is the first portion of a new and original work on the birds of Guiana, prepared by two brothers—Messrs. F. P. and A. P. Penard of Paramaribo. The book, we are given to understand, is the result of a long and arduous study of the subject under most difficult circumstances, of which the want of many necessary books was perhaps one of the smallest. It is chiefly noteworthy on account of the information which it contains on the life-history and habits of many species previously little known except by name. Besides recording their own observations, the authors have received great assistance in this part of their labours from numerous assistant observers, including native Indians, who make their home in the forests and on the rivers of Guiana, and live by shooting and fishing.

Besides the systematic part, which, beginning with the Pygopodes, contains a survey of all the known species of the birds of Guiana up to the end of the Picariæ, the authors give a general and very interesting account of the local distribution of the birds in the various districts and at different seasons of the year. They also endeavour to explain the rather startling ornaments borne by the males of some birds by suggesting their origin from "mental peculiarities" induced by dances, songs, fights, and other habits, and not simply from what is called "sexual selection." Thus the erectile frontal crest of certain Tyrant-birds is attributed to the result of the exertion caused by the capture of struggling insect-prey, which induces the energetic bird to erect its frontal feathers!

We will reserve our remarks on the general Avifauna of Guiana until the completion of the work by the issue of the second volume, which, we understand, has already reached Holland in manuscript, and will, we hope, be published without much delay. We are not sure that the authors have done well in writing in their native language. It is highly patriotic, no doubt, but we fear that it will interfere with the circulation of the book. English is well understood by all educated Hollanders, and especially by those who read scientific books.

We understand that the collection of bird-skins made by the authors has been acquired by the Tring Museum, and that the accompanying series of eggs (which contains specimens referable to 273 species) has been presented to the Leyden Museum.

43. *Pycraft on Birds.*

[A Book of Birds. By W. P. Pycraft. London, 1908. Pp. i–viii, 1–155, with coloured plates and text-figures.]

Mr. Pycraft has invariably something interesting to relate with regard to Ornithology, but we consider his talents wasted in writing letterpress to accompany the thirty inferior coloured plates contained in this volume, which consists of a general survey of the principal groups of Birds, with special reference to those of Britain and the rest of Europe.

The forms included are for the most part selected with the view of bringing out the differences in anatomical structure, and in this connexion the author warns his readers that similarity of appearance does not necessarily imply close relationship. The instances are well chosen; but for the general public it might have been better to have reduced the number of species and treated the remainder more fully, as may be seen in the case of the Megapodes and Cuckoos.

Nearly thirty pages are devoted to an admirable Introduction, which, after touching upon the descent of Birds from

Reptiles, proceeds to discuss their structure and development from the archaic *Archæopteryx* to the present day. Here Mr. Pycraft is in his element, and gives a clear and sufficient account of the osteology, myology, pterylography, feather-formation, mechanism of flight, moult, colour-change, air-sacs, digestive organs, eggs, and so forth. Excellent woodcuts aid the reader to follow the explanations in the text.

Finally, we pass chapter by chapter through the various Orders and Families of Birds, from the lowest to the highest; but this portion of the book is less successful than the former, scanty details being afforded in many cases and much information being omitted that might have easily been included by the addition of a few more pages. Some of the statements, moreover, are misleading, as when we are told that the Great Skua is "well-nigh extinct, so far as these islands are concerned," and that the Black Redstart is "tolerably common in Great Britain during the summer months."

44. *Richmond on the Generic Names of Birds.*

[Generic Names applied to Birds during the Years 1901 to 1905 inclusive, with further Additions to Waterhouse's 'Index Generum Avium.' By Charles W. Richmond, Assistant Curator, Division of Birds, U.S. National Museum. Proc. U.S. Nat. Mus. xxxv. pp. 583–655 (1908).]

Mr. F. H. Waterhouse's 'Index Generum Avium,' containing a list of all the generic terms proposed in the Class of Birds from the time of Linnæus down to 1889, is a work of great value to the ornithologist and well known to all of us. In 1902 Mr. Richmond published a supplement to Mr. Waterhouse's work * containing 675 additional names. Of these 475 had been instituted as new after the appearance of the 'Index,' while the remainder consisted of terms overlooked by Waterhouse or requiring correction. Mr. Richmond now gives us what may be regarded as a continuation of his former 'List,' drawn up in exactly the same way. It contains some 200 generic names introduced as new during the years from 1901 to 1905 inclusive, together with about 350 others of earlier date, the majority of which were not recorded by Waterhouse.

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* "List of Generic Terms proposed for Birds during the Years 1890 to 1900 inclusive, to which are added Names omitted by Waterhouse in his 'Index Generum Avium,'" Proc. U.S. Nat. Mus. xxiv. no. 1267 (1902).

For this new 'List,' as for the former, ornithologists owe Mr. Richmond their most sincere thanks. It will save them many weary hours of severe labour by indicating exactly when and where any particular generic name has been first proposed. So far as we have been able to judge, it has been prepared with great care, and merits our warmest commendation. As in Mr. Richmond's former 'List,' each name is accompanied by an explanation of its origin. Of course, authors of new names do not always tell us from what they are derived, so in such cases the derivations have to be guessed, but this is not usually a difficult matter. This part of the work, we are informed, is largely due to Mr. H. C. Oberholser, and was finally submitted to Dr. Theodore Gill for revision.

While, however, we fully recognise the merits of Mr. Richmond's work, we do not at all approve of the use that is likely to be made of it. Mr. Richmond and his friends, of what we may call the "ultra-prioritarian" school, have discovered some hitherto little-known works and memoirs, which, if recognised, would cause changes in some of our oldest and most familiar generic names. For example, it appears that Bechstein first proposed the name "*Accentor*" for the Dippers, but afterwards transferred it to the Hedge-Sparrows and used "*Cinclus*" for the Dippers. Mr. Richmond's view is that "*Accentor*" is, therefore, a mere synonym of *Cinclus*," and should not be used at all! The Hedge-Sparrows are to be called "*Laiscopus*"—the next earliest generic name given to them. It is difficult to realize the confusion that would arise from such a change in the name of one of our commonest and best-known birds. But this is merely a sample of many similar proposals to change well-established names for others that are practically new. We venture to prophecy—at any rate, we hope—that such innovations will not meet with much serious support. We recommend Mr. Richmond to study Mr. Boulenger's paper "On the Abuses resulting from the Application of the Rule of Priority in Zoological Nomenclature, and on the Means of protecting well-established Names," read before Sect. D at the Meeting of the British Association for the Advancement of Science at Dublin in 1908.

45. *South African Ornithologists' Union, Journal of the.*

[The Journal of the South African Ornithologists' Union. Vol. IV. Nos. 2, 3, and Supplement (Oct. 1908–Jan. 1909).]

The third number consists merely of the Titlepage, Index, and so forth, but the six papers in the second number are of considerable interest. First, we have the Report of the Committee for Migration for the Years 1906 and 1907. The species selected for observation were six, namely the European Swallow, the Bee-eater, the Lesser Kestrel, the Greenshank, the White Stork, and the Black-winged Pratincole. Circulars were sent out to Members of the Union and others, but the results proved disappointing, as few of the accompanying cards were returned with the requisite details. A good beginning has, however, been made, and we may expect to gain much information in the future from the fifteen South African observing-stations.

In a second paper Mr. J. A. Bucknill commences an account of the birds' eggs in the Transvaal Museum at Pretoria, collected in many cases by Messrs. Austin Roberts, R. H. Ivy, Krantz, Wilde, and Major Sparrow. Both nests and eggs are described, and of the latter measurements are given. Special attention should be called to the eggs of the various Cuckoos, to that of *Turdus cabanisi* (apparently undescribed before), and to that of *Poliohierax semitorquatus* (certainly new to science).

In a third paper Mr. C. G. Davies discusses the Wildfowl and Water-birds of Matatiele, E. Griqualand; while the remaining articles are from the pen of Mr. E. C. Chubb. These contain a description of the nest and eggs (with plate) of *Podica petersi*, from the Umguza River near Bulawayo, a bird whose nesting-habits have not previously been recorded; notes on Birds collected or observed at the Khami River in Matabeleland, and others on those obtained by the writer in the north of the same country, including the new species *Poliospiza mennelli* (*cf.* Bull. B. O. C. vol. xxi. p. 62, 1908).

In the "Occasional Notes" will be found an interesting letter from Mr. Bucknill, now resident in Cyprus, on the Birds of that island, and a note on the colouring-matter of the remiges of *Turacus corythaix* by Mr. Draper.

Lastly, the Supplement consists of Pamphlet No. 1 of the Bird Protection Committee, entitled "The South African Birds-of-Prey, their Economic Relations to Man," a particularly interesting sketch of the subject being elaborated at some length, with illustrations, by that well-known South African ornithologist Mr. Alwin Haagner.

46. *Ussher on Irish Birds.*

[National Museum of Science and Art, Dublin. General Guide to the Natural History Collections. A List of Irish Birds, shewing the Species contained in the National Collection. By Richard J. Ussher. Dublin, 1908. 54 pp.]

No more capable person could have been chosen to compile this List than Mr. Ussher, the well-known joint-author of the 'Birds of Ireland,' and a worthy successor of A. G. More, who issued a similar catalogue in 1885, followed by a second edition in 1890. The records have been made as complete as possible, but we are informed that the Little Bunting and Pallas's Grasshopper-Warbler have been added to the Irish List since this pamphlet was published, and also that the Reed-Warbler has been taken on the coast.

Mr. Ussher is careful to include in square brackets all the species which he considers either doubtful or, as in the case of American land-birds, to have probably received "assisted passages," and we notice that he thus brackets the recent record of the Canadian Crane. The reader is recommended to take special note of the Introduction, and in particular of the species now bracketed which were admitted by Mr. More, such as the Marsh-Titmouse and the Lesser Spotted Woodpecker. We should hardly have considered it necessary, however, to bracket the Kite, so common in Great Britain of old, as individuals from Wales must surely at times have crossed (and even now may cross) the sea to Ireland.

47. *Van Oort on a new* Macruropsar.

[On *Macruropsar magnus brevicauda*, nov. subsp., from the Island of Mefour. By Dr. E. D. Van Oort. Notes Leyd. Mus. xxx. p. 69 (1908).]

Macruropsar magnus of Schlegel is represented in the Leyden Museum by a series of specimens from the island Soek or Soepiori, of the Schouten group, collected by v. Rosenberg, which all agree with one another. On the other hand, all examples of the same form from Mefour, though similar in plumage, have shorter wings and tail. Dr. Van Oort characterizes them as constituting a new subspecies under the title *M. m. brevicauda.*

48. *Van Oort on a new* Chalcopsitta.

[On a new Species of *Chalcopsitta* from N.W. New Guinea. By Dr. E. D. Van Oort. *T. c.* p. 127.]

The "magnificent new species of *Chalcopsitta*," which it is proposed to call *spectabilis*, is nearly allied to *C. insignis* of Oustalet, but differs in many respects. The type-specimen, a male, was obtained by La Glaize in 1876 at Mambrioe in N.W. New Guinea.

49. *Van Oort on the Birds of the Netherlands.*

[Contribution to our Knowledge of the Avifauna of the Netherlands, being a List of all the Species of Birds hitherto observed, with Special References to Specimens in the Leyden Museum. By Dr. E. D. Van Oort. *T. c.* note xviii.]

The Ornithology of the Netherlands is of special interest to the students of British Bird-life, and we are glad to see that more attention has been paid to it of late years. Besides the present paper, we have received a copy of

Baron Snouckaert van Schauburgh's 'Aves Neerlandicæ,' which we hope to be able to notice in our next number.

Dr. Van Oort's memoir contains a list of all the known birds of Holland, 335 in number according to his reckoning, with remarks, especially on those represented in the Leyden Museum. Schlegel, who ruled that Museum so long and so worthily, adhered stedfastly to the old-fashioned plan of having all the specimens mounted. The natural consequence was that the shelves became crowded with a large series of birds, which it was impossible for the Ornithologist of the present age to use. It has been left to his successors at Leyden to alter this inconvenient plan, and, if we understand rightly, Dr. Van Oort with the help of many friends is now hard at work on a "collection of indigenous birds" for purposes of comparison.

We must not forget to mention that the Leyden Museum has lately received a very valuable addition by the bequest to it of the well-known collection of native birds of the late Baron van Wickevoort Crommelin.

Following the recent inconvenient innovation, Dr. Van Oort commences his List of Netherland Birds at the bottom. After the name of each species he gives the number of specimens of it in the Leyden Museum, and particularizes special examples worthy of notice. He also gives the popular names in the language of Holland, which are more different from the ordinary English vernacular appellations than we should have expected. As regards nomenclature he is not a full-blown trinomialist, except in special cases, such as the Wagtails and Tits; but he allows "homonyms," which are ugly, especially when the same name is repeated three times over. He has also adopted the perverse practice of not altering the termination of a specific term when the genus is changed—hence such barbarities as *Porzana parvus*, *Porzana pusillus*, and *Totanus maculata*. There is not, so far as we know, any canon of the International (or any other) Code which sanctions this obvious violation of the Laws of grammar—laws which, to our minds, are of far greater importance than those of Priority.

We will now add one or two remarks, as we turn over the pages of Dr. Van Oort's paper.

Two specimens of *Gyps fulvus* have been killed in Holland, and help to authenticate the occurrence of the single British example.

Dr. Van Oort recognises three forms of *Parus palustris* as found in Holland, and calls them *Parus communis longirostris*, *P. montanus salicarius*, and *P. montanus borealis*. According to Baron Snouckaert a specimen of the last-named race has been obtained in North Brabant. Mr. Ogilvie-Grant has lately recorded its occurrence in England (Bull. B. O. C. vol. xxiii. p. 34).

Our author refers all the Dutch Creepers of which he has specimens at Leyden to *Certhia brachydactyla*.

An example of *Emberiza leucocephala*, said to have been captured alive on May 3rd, 1873, and subsequently kept in the Zoological Garden at Rotterdam, is now in the Leyden Museum. We believe that a single specimen of this eastern form of *Emberiza palustris* has recently been obtained in Great Britain (see Bull. B. O. C. vol. xxi. p. 104).

50. *Verner on the Wild Birds of Spain.*

[My Life among the Wild Birds of Spain. By Colonel Willoughby Verner (late Rifle Brigade). London: John Bale, Sons, and Danielsson, Ltd., 1909. 1 vol., large 8vo.]

All bird-lovers—especially if they happen to be, or have been, birds'-nesters—will, we think, be delighted with Col. Verner's volume, which gives us the chief experiences of a life devoted to bird-hunting, profusely illustrated by the facile pencil and ready camera of the talented author. Of narratives of the pursuit and destruction of the larger game-animals we have had a large supply of late years. We confess to be nearly satiated with these tales of slaughter, although there is often much to be learned by the Naturalist from their perusal. But Col. Verner's book is quite of a different character. Very rarely does he take the life of a parent-bird, although he helps himself to the eggs when they are specially required for his cabinet. In fact, Col. Verner has supplied us with a complete manual of egg-hunting based on his own long experiences, and abundantly illustrated by his remarkable artistic talent.

Before commencing the main part of his work Col. Verner devotes several chapters to the preparations required by him who would go egg-hunting, and describes the paraphernalia required, as shown by his experiences during thirty-four years. Not only is the ordinary camping-out furniture described, but the ropes and shoes necessary for rock- and tree-climbing are distinctly specified. The leader of the expedition must "carry on his person" aneroid, watch, silk-rope, whistle, hunting-belt, swivels, knives, note-book, field-glass, telescope, compass, sketch-book, and small hand-camera; while ropes, canvas-sling, casting-line and weight, egg-boxes, and various other articles may be entrusted to his assistants.

After these preliminaries come chapters on the lagunas, plains, woodlands, sea-cliffs, and sierras of Southern Spain, and on the birds that specially resort to each of them. The larger birds naturally occupy most attention, but the smaller species are not forgotten.

"Among those which abound on the vega in spring is the handsome Calandra Lark (*Alauda calandra*), a fine bird with a conspicuous black gorget. Both this and the Common Bunting are very numerous. The pretty little Crested Lark is also abundant, its sweet flute-like call being constantly heard. The smaller Short-toed Larks of both species (*Alauda brachydactyla* and *A. bætica*) are also met with. The Common Fan-tail Warbler (*Cisticola cursitans*) is constantly to be seen and heard, its curious jerky flight and sharp staccato call making it easy to recognise."

In Southern Spain the Crane is the typical bird of the laguna, the Great Bustard of the plains, the Osprey of the shore, the Booted, Snake- and White-shouldered Eagles those of the forests, and the Griffon Vulture and Lammergeyer of the sierras; although these birds occasionally intrude into each other's domains. Full accounts are supplied of the habits of all these fine birds and of the adventures of the author and his friends in their forays on their nesting-places. Excellent and most characteristic pictures are given of all of them.

We are particularly pleased to have such full details as to the nesting of the Black Vulture (*Vultur monachus*) and White-shouldered Eagle (*Aquila adalberti*). The latter is the Spanish representative of the Imperial Eagle of Eastern Europe, and though its eggs are usually "white with a few faint rufous marks," Col. Verner, in February 1878, obtained some eggs of this species "richly clouded with purple and blotched with rufous-brown." So abnormal were they that the late Henry Seebohm, who was a great collector of birds'-eggs, tried to persuade Col. Verner to alter the labels on them to "Golden Eagle," eggs of which they certainly closely resembled. But the Colonel was firm in his refusal to yield to this suggestion, having himself taken the specimens.

We must now close our remarks on this excellent piece of work. It is not, of course, a strictly scientific book, and does not contain a learned description, even of a new subspecies! But we have read every word of it ourselves and advise all who are interested in birds to do the same.

XVII.—*Letters, Extracts, and Notes.*

We have received the following letters addressed "To the Editors of 'The Ibis'":—

Sirs,—Two young birds of *Parmoptila woodhousii* lately examined are younger than that figured in the last number of 'The Ibis.' The little wattles at the gape in these specimens are very conspicuous, being quite white, while the margin of the skin on which they are situated is black. When the mouth is opened wide and the skin at the gape stretched, the open mouth appears to be bordered on each side by a row of white beads, strung, far apart, on a black string. The inside of the mouth, also, which is whitish in colour, is marked with symmetrically arranged black spots—five on the palate, two on the tongue, and one under the tongue. The whole arrangement seems to serve the purpose of making the open mouth conspicuous.

I am, Sirs, yours &c.,
GEO. L. BATES.

Kribi, Kamerun,
October 11th, 1908.

SIRS,—I wish to bring to your notice three notes on our New Zealand birds, which are, I think, worthy of record:—

(1) In the Trans. N.Z. Inst. (vol. xxxvi. p. 119) is a reference to parasitic Cuckoos occasionally reverting to the habit of nest-building. I have just had a most authentic account of the feeding by two adults of five little Bronze Cuckoos (*Chalcococcyx lucidus*), the gradual teaching to fly, and, finally, the discovery of a nest with the feathers of the adult birds in and about it.

This conduct by a bird so universally considered strictly parasitic is extremely interesting, and if you will refer to the Trans. Austr. Assoc. for the Adv. of Sci. (vol. x. p. 323) you will find reference to similar habits of Cuckoos in India. This is another step towards the elucidation of the strange habit of parasitism.

(2) In vol. xl. of Trans. N.Z. Inst. now to hand you will find (p. 498) a most remarkable instance of sagacity or instinct in a pair of Paradise-Ducks (*Casarca variegata*). They were surprised in the bush and instantly took to the water with ten little ones. Entering the rushing swollen torrent they sailed out diagonally, one with its beak to the other's tail, and all the little ones settled against and above them as they battled across the stream.

(3) The Dotterel of New Zealand (*Charadrius bicinctus*) is a clever deceiver and performs many curious antics to lead an intruder from its nest. A reliable observer says:—"On starting a Dotterel out of her nest, her antics were of the usual kind, fluttering away in front of me, as though with a broken wing. Suddenly I saw her drop alongside of a

stunted white tussock and remain there until I was quite close to her. Judge of my surprise to find that her stoppage had been at a Ground Lark's (*Anthus novæ-zealandiæ*) nest containing eggs. Three days later I was fishing on the same ground and the Dotterel again went through the same performance. This was the most cunning act that I have ever heard of in any of the feathered tribe."

I may say that the observers in all three instances are well known to me personally and are thoroughly reliable men.

I have done what I can to work out the parasitic problem, and have, I think, made some steps towards the elucidation of it. I have fairly well exhausted the subject of our Long-tailed Cuckoo, and am now engaged on a similar collective investigation on the Bronze Cuckoo.

Hoping you may make some use of these notes on our interesting birds, which are fast disappearing from among us,

I am, Sirs, yours &c.,
Robert Fulton, M.D.

Dunedin, N.Z.,
October 29th, 1908.

Sirs,—You have done me the honour of reviewing my 'History of the International Convention of 1902' in your valuable periodical, for which I am very grateful. But I must regret that in all English reviews, and so in the present case in 'The Ibis,' there occurs some misunderstanding. The Convention never meant to force upon anybody "new methods," as rules §§ 1 and 9 admit of exceptions, in consequence of which *every adhering State is allowed to draw up its lists (schedules) entirely in conformity with its own considerations.*

The chief object of the Convention is the protection of *migrant birds*, which, after they have left their homes, are exposed in the south (Italy) to the severest persecution and even extermination.

This evil can only be remedied by international regulations. The English List of Birds comprises also a number of migrant species which *leave the country* and are therefore exposed in the south to the same persecution.

It is deeply regrettable that a country so highly esteemed as England refuses its *moral support* in such a noble and useful matter, just when this is especially wanted.

I am, Sirs, yours &c.,
Otto Herman.

Hungarian Central Bureau for Ornithology,
Budapest, October 12th, 1908.

Sirs,—I have been invited to write a Life of the late Professor Alfred Newton, F.R.S., of Magdalene College, Cambridge. If any of your readers, who have letters or reminiscences or other interesting information about Professor Newton will be kind enough to communicate with me, I shall be exceedingly grateful to them. I will, of course, undertake to return all letters &c. to the senders.

I am, Sirs, yours &c.,
A. F. R. Wollaston.

Savile Club,
107 Piccadilly, W.,
March 1st, 1909.

Sirs,—I have received from Mr. Frank Atterbury, Repression of Slavery Department, Roseires, Blue Nile, an aluminium ring taken off the leg of a Stork (*Ciconia alba*) killed near there on October 30th, 1908.

The ring, which measures $2\frac{3}{8}$ in. by $\frac{5}{8}$ in. when flattened out, is marked "Vogelwarte, Rossitten 1757, Germania." Communication with the Rossitten Ornithological Observatory, to which I have returned the ring, has elicited from Dr. J. Thienemann the information that the Stork No. 1757 was ringed in the nest at Goldap, E. Prussia, in July 1908. The exact position of Roseires is 11° 51′ 22″ N. lat. and 34° 23′ 10″ E. long.

It will be remembered that the capture of a Rossitten Stork (No. 163), ringed at Köslin, in Pomerania, in July 1907, and killed at Fort Jameson, N.E. Rhodesia, in December of the same year, was recorded in the 'Field' of Jan. 25th, 1908, and the account quoted in the 'Ibis' of April 1908, p. 389.

I am, Sirs, yours &c.,
A. L. Butler.

Khartoum,
February 4th, 1909.

Another German Stork in South Africa.—We have received from Herr Thienemann, the Director of the German Ornithological Observatory at Rossitten, in East Prussia, intelligence of the capture of another of their marked Storks in South Africa. The Stork in question was bred on the property of Herr Adam Sobottka at Lyck in Eastern Prussia, and was labelled, on July 7th, 1907, with a small aluminium ring on one foot, on which was engraved "Vogelwarte Rossitten, Germania, 769." In the autumn of the same year it was captured by some bushmen in the Kalahari Desert. The aluminium ring, which seems to have been considered by the bushmen to have been of heavenly origin, passed into the hands of a trader on the northern edge of the Kalahari, who sent it, with an account of the way in which it had been obtained, to the Editor of 'The Wide World' in London.

This and the previous instance, in which one of the marked Storks of Rossitten was taken in South Africa and identified *, seem to establish the fact that Storks bred in nearly the most northern limit of their range cross the whole continent of Africa to pass the winter months south of the Equator.

Arrival of Migrants in North-east Greenland.—In the account of the explorations of the eastern coast of Northern Greenland by the 'Danmark,' under the command of the ill-fated Mylius Erichsen (1906–1908), which was read before the Royal Geographical Society in December last (see Geogr. Journ. xxxiii. p. 40), will be found the following description of the arrival of the spring-migrants at Cape Danmark, where the winter-quarters of the Expedition were established in 77° N. lat. :—

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* See 'The Ibis,' 1908, p. 389.

"The change into summer was quite sudden. Gradually the temperature of the snow had risen to zero, and then in one day it all melted. The rivers were rushing along, flowers were budding forth, and in the air the butterflies were fluttering. It was a lovely time, bringing hard work for the Botanist Lundager, and the Zoologists Manniche and Johansen. The birds came nearly all on the same day, most of them even at the same hour. One day we had only had the ordinary Ptarmigan and the Raven; the next day we had the Sanderling, the Ring-Plover, the Goose, the Eider-Duck, and many others. Young Sanderlings, Icelandic Ring-Plovers, and Sabine's Gulls have been found by Mr. Manniche, our indefatigable ornithologist, and fine specimens were brought home."

We hope to receive, in due course, an account from Mr. Manniche of the birds obtained during this famous expedition.

News from Mr. A. L. Butler.—Our excellent correspondent Mr. A. L. Butler passed some time last year on the Red Sea coast of the Anglo-Egyptian Soudan, and made many notes on the spring migrants. Writing from Khartoum in October last, Mr. Butler says that he still continues to obtain specimens of species new to that locality, while from Mongolla, on the Upper White Nile, he has lately received examples of the little-known *Passer shelleyi* (Shelley, B. Afr. iii. p. 247).

The Booth Collection at Brighton.—Mr. Arthur Griffith, a Trustee of the "Booth Museum" at Brighton, has lately visited Hastings, and has obtained there some valuable additions to the Collection. Amongst these are specimens of the Pine-Grosbeak, Red-footed Falcon, Little Gull (in adult summer plumage), Red-necked Grebe, Whiskered Tern, Black Lark, Great Reed-Warbler, and Icterine Warbler, all well-authenticated examples from Kent or Sussex. We wish that all our provincial collections of birds were as well cared for and kept up to the mark as that at Brighton.

THE IBIS.

NINTH SERIES.

No. XI. JULY 1909.

XVIII.—*Contributions to the Ornithology of the Sudan.*—No. IV.* *On Birds observed on the Red Sea Coast in May 1908.* By A. L. Butler, F.Z.S., M.B.O.U., Superintendent of Game Preservation, Sudan Government.

I spent the month of May in 1908 on the Red Sea coast in the vicinity of Port Sudan, and the ornithological notes then made form the subject of this paper. The dates on which migratory birds were met with were carefully recorded daily. The great number of Blackcaps, Garden-Warblers, and Barred Warblers seen was remarkable, and the main line of migration of these three species seems, in the Sudan, to lie along the Red Sea coast. None of them is ever abundant at Khartoum, and I often saw more of them in half an hour than I have seen in eight years in the Nile Valley. I was surprised to find them still in such numbers in Africa late in May. Possibly these late individuals are the birds from the most northern parts of the range of the species.

Port Sudan lies about forty miles north of Suakin. A flat scrub-covered plain extends from the sea to the ranges of barren mountains twenty or twenty-five miles inland, sandy near the coast, and becoming stony as the hills are neared. Through these rocky hills runs a narrow valley known as the Khor Arbat, in which is that delightful rarity in the Sudan, a permanent flowing stream. This loses itself in the sands of the plain shortly after emerging from the hills. I found the vicinity of the stream a capital camping-place and collecting-ground, where birds were abundant. In some places the little river ran twenty yards wide and a foot deep, babbling over grey, water-rounded stones; in others it formed narrow, dark, deep pools under precipitous faces of rock, and offered me the delightful luxury of a swim in cool water. On both sides of the Khor rose high, rocky hills, intersected by little winding valleys descending to the stream. The hills themselves were very barren and almost entirely composed of rock, but along the stream there was plenty of cover, chiefly consisting of fringes of various thorny acacias and of tamarisks forming dense thickets. The stream teemed with a tiny fish, *Cyprinodon dispar*, of which the sexes are so unlike in appearance that I at first imagined that they were two quite different species. They were literally in millions; I have never seen water so full of fishes anywhere, and their presence in every little stagnant pool, as well as in the main stream, doubtless accounted for the almost total absence of mosquitoes. I saw one albino of this fish, but, though I tempted him repeatedly to swim over a submerged handkerchief, he always eluded the raising of this primitive net. In the deeper, darker pools water-tortoises, *Pelomedusa galeata*, moved slowly about or scuttled in and out of rocky crevices; at dusk they came out to the shallows. They were very numerous, and I counted thirty, and captured thirteen for the Giza Zoological Gardens, on my last evening. A toad, *Bufo dodsoni*, was plentiful under stones along the water's edge, and a bluish lizard with an orange-red head, the name of which I do not remember, was common and conspicuous on the rocks. Of mammals in this neighbourhood, the principal was the Nubian Ibex, which was fairly plentiful on the larger hills; I shot one on Jebel Bawati, a good male with horns of 38½ inches. The Isabelline Gazelle was met with here and there in valleys among the hills, but was not very plentiful in this particular locality. I obtained specimens of that large-eared, slender-limbed Fox, *Vulpes famelica*, of the pretty, but evil-smelling Zorilla (*Ictonyx erythreæ*), of a Hyrax (*Procavia ruficeps*), a Spiny Mouse, and a Gerbil.

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* See 'The Ibis,' 1905, p. 301, 1908, p. 205, and 1909, p. 74.

Jebel Bawati, or Bawateb (5514 feet), is one of the largest eminences in the near vicinity. It lies back among the other hills some forty miles north-west of Port Sudan, and is about one march from the Khor Arbat.

The natives of this district are Hadendowa of the Amarar tribe.

1. NECTARINIA METALLICA Licht.

a–h. Five adult males, one young male, and two females. Khor Arbat, 1. 5. 08 to 6. 5. 08.

The Metallic Sun-bird was very abundant and the males were in perfect breeding-dress. Beautiful little parties of this species and the Abyssinian Sun-bird used to collect on trees in flower near the water. One male, though otherwise in perfect breeding-plumage, still retained the short dull-coloured tail; it appeared, on dissection, to be breeding.

2. CINNYRIS HABESSINICUS (Hempr. & Ehr.).

a–g. Three adult males and four young males. Khor Arbat, 1. 5. 08 to 8. 5. 08.

The Abyssinian Sun-bird was very plentiful in the Khor Arbat. The males had not quite completed the moult, and shewed many quills about the head and neck.

3. MOTACILLA ALBA Linn.

The only White Wagtails I saw were two in the Khor Arbat on May 13th.

4. MOTACILLA FLAVA Linn.

I saw very few Yellow Wagtails in the Khor Arbat, and only obtained four specimens. Black-headed birds were seen on the first five days in May, and various grey-headed birds up to the 16th. In treating these birds subspecifically I do so with hesitation, and will, for the present, keep a note of interrogation after each.

(i.) *Motacilla flava flava* Linn.?

a. ♀. Khor Arbat, 13. 5. 08.

This was the last Yellow Wagtail I saw, excepting one on May 16th. From its very marked pale supercilium and a touch of whitish on the ear-coverts I ascribe it to this form.

(ii.) *Motacilla flava cinereocapilla* Savi?

a. ♂. Khor Arbat, 6.5.08.

Mr. M. J. Nicoll, who has kindly noted his opinions on the labels of a large series of Yellow Wagtails collected by me in the Sudan, has marked this bird *M. f. flava*. It has, however, much more white on the throat than any of my large series of that form, and, though it has a broad and distinct white eyebrow, the lores and ear-coverts are very dark blackish grey, and the ear-coverts shew no traces of white. I should call it *M. f. cinereocapilla* with an unusually well-defined superciliary stripe. The testes were of the size of hemp-seeds.

(iii.) *Motacilla flava pygmæa* A. E. Brehm?

a. ♂. Khor Arbat, 12. 5. 08.

I have a typical specimen of this well-marked small *resident* Egyptian race, with a wing of 73 mm., kindly given me by Mr. M. J. Nicoll. My Khor Arbat bird almost exactly agrees with it, but has a wing of 78 mm.; it was apparently paired with a female which I did not get. There were only two birds in all, in what seemed quite a likely breeding-place, near permanent running water. The testes of this bird were enlarged to about the size of hemp-seeds, as in the bird referred to *M. f. cinereocapilla*. These are the only two Yellow Wagtails that I have shot in the Sudan in the spring in which the testes have been at all enlarged.

I notice that in Mr. Nicoll's Egyptian specimen of *M. f. pygmæa* the longest secondary exceeds the longest primary by 1 mm. I have before me some fifty skins of Yellow Wagtails, including *M. f. raii, M. f. flava, M. f. melanocephala, M. f. melanogrisea, M. f. borealis*, &c., and this is the only bird in which this is the case. I do not know if this is the rule in *M. f. pygmæa*, but if so, the slight difference in the proportionate length of primaries and secondaries in the non-migratory bird would be interesting. In my *slightly* larger Khor Arbat bird, however, the secondaries fall short of the primaries by 7 mm.

(iv.) *Motacilla flava melanocephala* Licht.?

a. ♀. Khor Arbat, 5.5.08.

A few Black-headed Yellow Wagtails were seen along the stream for the first five days of May. This female was with two or three of these, and probably is of the same subspecies. There is hardly any trace of a pale eyebrow.

5. Alæmon alaudipes (Desf.).

Fairly frequent round Port Sudan and along the coast plain.

6. Galerida cristata (Linn.).

a–d. Three males and one female. Port Sudan, 19.5.08.

Crested Larks were very common round Port Sudan and along the coast. I took my examples to Tring to get them subspecifically identified, and they appeared to agree best with *G. c. brachyura* Tristr., of Palestine.

7. Ammomanes deserti (Licht.).

a. ♂. Jebel Bawati, 11.5.08.
b. ♀ juv. Khor Arbat, 1.5.08.
c. ♀. Khor Arbat, 1.5.08.

Pairs and small parties of these little Desert-Larks were met with daily among the rocky ground near the hills.

8. Pyrrhulauda melanauchen (Cab.).

a. ♂. Port Sudan, 25.5.08.

These Finch-Larks were abundant near the coast. I met with one or two very large flocks of some hundreds. They all seemed to be in full moult.

9. Emberiza septemstriata Rüpp.

a. ♀. Khor Arbat, 2.5.08.

Pairs and small parties of this little Rock-Bunting were fairly frequent among the hills. I noted them on eight of the first sixteen days of May.

10. Ædemosyne cantans (Gm.).

a. ♀. Talgwareb Station, 29.4.08.

I shot this bird at a station on the Red Sea Railway on my way to Port Sudan, but I did not note it on the coast.

11. HYPHANTORNIS GALBULA Rüpp.

a–f. Five males and one female. Khor Arbat, 2.5.08 to 6.5.08.

These Weavers were very plentiful, and busily engaged in building nests on the tamarisks and acacias near the stream.

12. ORIOLUS GALBULA Linn.

I only noticed the Golden Oriole twice in the Khor Arbat, on May 4th and 17th. Both individuals were adult males.

13. CORVUS AFFINIS Rüpp.

This Crow was seen at Jebel Bawati and among the hills.

14. CORVUS UMBRINUS Sundev.

This species was the common Crow round Port Sudan and on the coast.

15. LANIUS LEUCONOTUS Brehm.

a. ♂ (breeding). Khor Arbat, 13.5.08.

b. ♂ (breeding). Jebel Bawati, 9.5.08.

These birds were noted daily throughout the month, and I think that most of them were breeding. On May 16th I found a nest containing four young, placed about four feet from the ground in a "Marakh" bush (*Leptadenia spartium*).

16. LANIUS ISABELLINUS Ehr.

a. ♂. Khor Arbat, 4.5.08.

An adult male in very perfect plumage. This was the only Isabelline Shrike I noticed during the month.

17. LANIUS NUBICUS Licht.

The Masked Shrike was common in the Khor Arbat.

18. RHODOPHONEUS CRUENTUS (Hempr. & Ehr.).

a. ♂. Port Sudan, 18.5.08.

b. ♀. ,, ,,

c. ♂ juv. ,, ,,

Seen a few times on the plain between Port Sudan and Khor Arbat. In the young male the pink of the breast extends up on to the throat, as in the adult, but is there bordered by a narrow black line on each side—an inclination towards the plumage of the female.

19. Argya acaciæ (Licht.).

a. ♂. Jebel Bawati, 8. 5. 08.
b. ♂. " "
c. ♂ juv. Port Sudan, 22. 5. 08.

Lichtenstein's Desert-Babbler was common in the bush between the coast and the mountains. A female shot on May 9th contained a perfect egg, and I took a clutch of five fresh eggs from a nest in a thorn-bush in the town of Port Sudan, on May 24th.

20. Pycnonotus arsinoe (Hempr. & Ehr.).

This Bulbul was common round Port Sudan and in the Khor Arbat.

21. Prinia gracilis (Licht.).

a. ♂. Khor Arbat, 4. 5. 08.
b. ♀. " 4. 5. 08.

Fairly numerous in the tamarisk-thickets near water. The two specimens shot were in breeding condition.

22. Cercotrichas podobe (P. L. S. Müll.).

a. ♂. Khor Arbat, 2. 5. 08.
b. ♀. " 14. 5. 08.

The Black Bush-Robin was common in the scrub along the coast plain, and in the tamarisk-thickets of the Khor Arbat.

23. Acrocephalus streperus (Vieill.).

I shot a Reed-Warbler on May 5th, and perhaps overlooked others among the Pallid Warblers, but the bird was certainly not plentiful.

24. Hypolais pallida (Hempr. & Ehr.).

a. ♀. Talgwareb Station, 29. 4. 08.

The Pallid Warbler was numerous round Port Sudan and in the Khor Arbat for the first ten days of May, and was noted less frequently up to the 24th.

25. Sylvia hortensis (Gm.).

a. ♀. Khor Arbat, 1.5.08.
b. ♀. ,, 4.5.08.

Garden-Warblers were, perhaps, even more numerous than Blackcaps. Their numbers shewed no diminution until the 16th of May, when there was a great decrease, and on the 18th I noted only a few individuals.

26. Sylvia atricapilla (Linn.).

a. ♂. Khor Arbat, 2.5.08.

Immense numbers of Blackcaps assembled along the coast during the first half of May, together with Barred and Garden-Warblers. These three species seemed everywhere, and abundant as the Barred Warblers were, the Blackcaps and Garden-Warblers greatly outnumbered them. I saw very great numbers of this species daily from May 1st to the 11th, and large numbers again on the 14th and 16th. I spent the next few days looking for sea-birds, and saw no more Blackcaps afterwards.

27. Sylvia nisoria Bechst.

a. ♂. Khor Arbat, 4.5.08.
b. ♂. ,, 5.5.08.
c. ♂. ,, 5.5.08.
d. ♂. ,, 1.5.08.
e. ♂. ,, 1.5.08.
f. ♀. Port Sudan, 30.4.08.

The numbers of migrating Barred Warblers which I saw during the first week in May astonished me. During that time the scrubby thorn-bush between the coast and the hills was full of them. Often there were eight or ten in one small thorn-tree, and frequently one could have killed three or four at a shot. Indeed, I twice killed two with the same shot *unintentionally*. For the first five days of May there must have been thousands of them within a comparatively small radius round my camp. Certainly I saw hundreds in a morning, and it was the same in whichever direction I wandered in the bush. On the 6th and 7th of May these great numbers shewed a considerable decrease. From the

8th to the 12th I travelled inland among barren hills where there was little cover, and on my return I saw no more Barred Warblers, though for several days later the Blackcaps and Garden-Warblers remained as plentiful as before. All specimens of these three species were in perfect plumage, and I made some beautiful skins of them, though it required time and patience to turn them out unsoiled, as they were simply little balls of fat, which melted into oil directly I started working on them in the extreme heat; and, unless a cheap thermometer deceived me, the temperature one afternoon rose to 135° in my tent, when the sun was full on it.

On the Nile the Barred Warbler seems quite uncommon. Witherby met with a few, but neither Rothschild and Wollaston nor Hawker came across it. At Khartoum I have only recognised it once, in October.

28. Sylvia blanfordi Seebohm.

a. ♂. Khor Arbat, 4. 5. 08.

This, a male in breeding condition, was the only specimen of Blanford's Warbler that I noticed.

29. Sylvia curruca (Linn.).

a. ♂. Khor Arbat, 2. 5. 08.
b. ♀. „ 3. 5. 08.

The Lesser Whitethroat was plentiful from May 1st to May 5th, but I did not note it after May 9th.

30. Sylvia cinerea Bechst.

a. ♂. Port Sudan, 30. 4. 08.

This example is the only greater Whitethroat that I have so far identified in the Sudan.

31. Aëdon galactodes (Temm.).

a. ♂ (breeding). Khor Arbat, 13. 5. 08.

Rufous Warblers were common in the Khor Arbat, and were probably breeding in the tamarisk-thickets.

32. Ruticilla phœnicurus (Linn.).

Either I was too late for the migrating Redstarts or I was not on their line. One individual at Port Sudan on April

30th, and another in the Khor Arbat on May 3rd, were all the examples that I saw of this common winter-visitor.

33. Saxicola melanoleuca (Güld.).
Saxicola melanoleuca occidentalis Salv.
a. ♀. Khor Arbat, 6.5.08.
b. ♂. ,, 7.5.08.
c. ♀. ,, 13.5.08.

The birds obtained at Khor Arbat belong to the western form of the Black-throated Chat, with a markedly smaller black gorget than in *S. melanoleuca* (Güld.), the eastern bird, which is the form commonly met with in the Sudan from autumn to spring. I only met with the three examples shot, and unfortunately both the female specimens were destroyed by a cat when drying. I compared the male with both forms at the Natural History Museum, and Mr. M. J. Nicoll, whom I asked to examine it, also attributes it to the western subspecies.

A Black-throated Chat shot at Khartoum on April 4th, 1908, also appears to me to be *S. m. occidentalis*. In both this and the Khor Arbat bird, besides the smaller amount of black on the throat, the wings measure 87 mm. against 89 mm. in several specimens of *S. m. melanoleuca*. In both the testes were much enlarged, which was not the case in specimens of *S. m. melanoleuca* shot in April.

34. Saxicola leucopygia Brehm.
a–o. ♂ ♂. Khor Arbat and Jebel Bawati, May 2nd to 16th.
p–r. ♀ ♀. ,, ,, ,, ,,

Of the fifteen males collected seven have the cap pure white, two have the cap white except for a single black feather, in four the cap is mixed black and white, in one the head is entirely black, and in another (the only breeding male) there is only a single white feather on the crown.

Of the three females two (one of which had large eggs in the ovary) have the cap pure white, and the third has the head entirely black. This handsome Chat is very abundant on the hills along the Red Sea coast, and its jetty black and snowy white plumage make a pleasing contrast to the sombre surroundings of rock. It breeds before assuming the white crown, and pairs may be seen composed of two white-capped birds, two black-headed birds, or one of each.

35. Myrmecocichla leipura (Hempr. & Ehr.).

a. ♂ (breeding). Jebel Bawati, 9. 5. 08.
b. ♂. Jebel Bawati, 9. 5. 08.
c. ♂. Khor Arbot, 5. 5. 08.
d. ♂ juv. „ 7. 5. 08.
e. ♂. „ 1. 5. 08.

These little Ant-Chats were common in the hills round Khor Arbat, and especially numerous near the stream. They were charmingly tame and familiar, venturing very close to my tent. The young bird (*d*) had apparently only left the nest a few days.

36. Muscicapa grisola Linn.

a. ♀. Khor Arbat, 2. 5. 08.

A few Spotted Flycatchers were seen during the first four days of May only.

37. Batis orientalis Heugl.

A single individual seen among a few stunted trees high up on Jebel Bawati was the only specimen of this little Flycatcher that I noticed (May 11th).

38. Hirundo rustica Linn.

The Common Swallow was numerous during the whole month. I noted it daily from May 1st to 29th, excepting from the 9th to 12th, when I was at Jebel Bawati.

39. Hirundo urbica (Linn.).

Some House-Martins were seen on the first four days of May.

40. Cotile riparia (Linn.).

Sand-Martins were common during my stay, and were noted daily, except at Jebel Bawati, from April 30th to May 29th.

41. Ptyonoprogne obsoleta (Cab.).

a. ♂. Khor Arbat, 6. 5. 08.

This Cliff-Swallow was common on the rocky hills round

Khor Arbat and at Jebel Bawati. A pair were building on a rock-face in the Khor when I arrived there on May 1st, but the necessity of shade compelled me to pitch my tent immediately under their nest, which caused them to forsake it.

42. Cypselus apus (Linn.)?

I saw a single Swift, which looked like *C. apus,* in the Khor Arbat on May 14th.

43. Cypselus affinis Hardw.

a. ♂. Khor Arbat, 4. 5. 08.

These little White-rumped Swifts were common among the hills. They generally flew high, descending occasionally to skim over the pools in the khor.

44. Caprimulgus nubicus Licht.

a. ♂. Khor Arbat, 15. 5. 08.

This was the only Nightjar met with near the Red Sea coast. It was observed or heard every evening along the tamarisk-thickets near water in the Khor Arbat, but in these valleys between high hills it was very difficult to see to shoot it after dusk. The note is a liquid sound, like "chukku! chukku! chukku!"

45. Merops apiaster Linn.

Large numbers of Common Bee-eaters appeared at the Khor Arbat on May 6th and 7th, and joined the Blue-cheeked birds among the tamarisks. When both are heard together there is a considerable difference between their notes, the call of *M. persicus* being shriller than that of the common species.

46. Merops persicus Pall.

a. ♀.	Khor Arbat,	2. 5. 08.
b. ♀.	,,	1. 5. 08.
c. ♂.	,,	16. 5. 08.
d. ♂.	,,	14. 5. 08.

Large numbers of the Blue-cheeked Bee-eater frequented the tamarisks in the Khor Arbat all the time that I stayed there (May 1st to 16th).

47. Upupa epops Linn.

I only noted Hoopoes on the 2nd and 4th of May.

48. Irrisor erythrorhynchus (Lath.).

I picked up the sun-dried remains of a Red-billed Wood-hoopoe in the Khor Arbat. I imagine this must be about the northern limit of its range along the Red Sea coast.

49. Trachyphonus margaritatus (Rüpp.).

a. ♂. Talgwareb Station, 29. 4. 09.

b. ♂. Khor Arbat, 4. 5. 08.

These Barbets were fairly common in the Khor Arbat. The tail of the second specimen was bent in a curve; probably it had been sitting in a nest-hole.

50. Campothera nubica (Gm.).

a. ♂. Khor Arbat, 7. 5. 08.

I saw the Nubian Woodpecker a few times in the Khor Arbat.

51. Iyngipicus obsoletus (Wagl.).

a. ♂. Khor Arbat, 7. 5. 08.

I only saw the Pigmy Woodpecker three or four times.

52. Columba livia Briss.

A small colony of Rock-Pigeons frequented the clefts in a very high and precipitous rock-face near my camp in the Khor Arbat, but I could not get a shot at them.

53. Turtur roseigriseus (Sundev.).

a. ♂. Khor Arbat, 16. 5. 08.

54. Turtur senegalensis (Linn.).

Both this species and the last were common in the Khor Arbat.

55. Œna capensis (Linn.).

Common in the Khor Arbat and near the coast.

*56. Athene noctua spilogaster.

Athene spilogaster Heuglin.

a. ♂. Jebel Bawati, 11. 5. 08.

This was the only example of this little Owl that I have seen in the Sudan. I got it quite by chance, as I had wandered out by moonlight to try to shoot an Eagle-Owl that was calling somewhere near, and on returning noticed a dark lump on the top of a small leafless tree which, I remembered, had no such lump on it in the daytime. A shot at this object resulted in its remaining stationary, but its shape seemed to have changed, and on my shaking the tree the little Owl fell to the ground.

57. Bubo ascalaphus Sav.

The Desert Eagle-Owl was often heard at night among the hills, but I did not come across it in the daytime.

58. Falco, sp. inc.

A pair of Falcons were noticed several times at the Khor Arbat, but were not identified.

59. Helotarsus ecaudatus (Daud.).

I saw a single Bateleur Eagle in the Khor Arbat, and a pair at Jebel Bawati.

60. Aquila imperialis Bechst.

A pair of Imperial Eagles frequented the Khor Arbat, and used to glide along the higher slopes of the hills in sight of my tent every day, apparently hunting for Hyraxes. I saw another pair on Jebel Bawati. I was anxious to get a specimen, and, as it was useless to climb about such steep hills after birds with such powers of wing, I set a trap for them, baited with a dead kid, on the summit of a small hill within view of my camp. I soon, however, got tired of climbing up and down five hundred feet of rock to release Egyptian Vultures, and had to give up the attempt. A rat-trap with the teeth blunted held the Vultures without injuring them at all.

61. Buteo desertorum (Daud.).

I saw these Buzzards daily in the Khor Arbat.

62. Gyps rueppelli Brehm.

Vultures, which I think belonged to this species, were frequently seen high in the air.

63. Neophron percnopterus (Linn.).

Egyptian Vultures were abundant everywhere.

64. Butorides atricapillus (Afzel.).

One example was seen at the edge of the harbour, on April 30th.

65. Sula sula Linn.

a. ♀. Port Sudan, 22. 5. 08.

The Brown Booby was very plentiful in the harbour and very tame.

66. Sterna saundersi Hume.

a. ♂. Port Sudan, 26. 5. 08.
b. ♀. ,, ,, 26. 5. 08.
c. ♂. ,, ,, 24. 5. 08.

Numbers of these dainty little Terns frequented a beach of coral and sand on the south of Port Sudan harbour with a persistence that caused me to spend some time in searching for eggs. The specimens shot, however, were not in breeding condition.

67. Sterna bergii Licht.

a. ♂. Port Sudan, 22. 5. 08.
b. ♀. ,, ,, 27. 5. 08.

68. Sterna media Horsf.

a. ♀. Port Sudan, 27. 5. 08.
b. ♀. ,, ,, 24. 5. 08.

Both this large Tern and the last were abundant in Port Sudan harbour during May.

69. Larus fuscus Linn.

a. ♀. Port Sudan, 23. 5. 08.

The Lesser Black-backed Gull was fairly common in Port Sudan harbour.

70. Larus leucophthalmus Temm.

a. ♂. Port Sudan, 22. 5. 08.
b. ♂. ,, ,, 22. 5. 08.
c. ♂. ,, ,, 23. 5. 08.

Extremely abundant in the harbour and very tame. Immature brown birds were much more numerous than adults.

71. Ammoperdix cholmleyi Grant.

a. ♂. Khor Arbat, 2. 5. 08.

b. ♂. „ 2. 5. 08.

These little Rock-Partridges were tolerably common in the hills through which the Khor Arbat runs. They came down to the water at mid-day, and, after drinking, spent the heat of the day under bushes and creepers along the edge of the stream.

Francolinus erckeli (Rüpp.) was not seen, and does not, I think, extend north of Erkowit.

72. Pterocles exustus (Temm.).

Common round Port Sudan, but I did not see large numbers together.

73. Pterocles lichtensteini Temm.

a. ♂. Khor Arbat, 16. 5. 08.

These beautiful Sand-Grouse were fairly plentiful in the Khor Arbat and at Jebel Bawati. I saw little of them in the daytime, beyond flushing a few occasionally among the rocks, but every night small parties of them came flying down to the khor to drink, until considerable numbers were collected along the stream. They did not arrive at the water until dusk was merging into darkness, but continued to come until after 8 P.M. Indeed, it was most difficult to see to shoot even the earlier birds, as they flew low, and the high hills shutting in the khor prevented me from getting them straight against the sky-line. The call of this species is a sharp, clear double whistle, like "quittoo! quittoo!," repeated two or three times, and by 8 o'clock this, and an occasional rattle of wings, sounded on all sides, long after the birds themselves had become invisible.

The crop of the male skinned was full of the seeds of an acacia. I have also seen Lichtenstein's Sand-Grouse among the hills between Suakin and Kassala, and near the Shabluka Cataract, fifty miles north of Khartoum, but only among rocky hills.

74. Ægialitis geoffroyi (Wagl.).

These Sand-Plovers were seen along the shore till May 26th.

75. Pavoncella pugnax (Linn.).

A flock of Ruffs flew low over me in the Khor on the 14th of May.

76. Totanus glareola (Linn.).

a. ♀. Khor Arbat, 13.5.08.

A few Wood-Sandpipers were seen along the stream in the Khor Arbat, on the 6th, 7th, 12th, and 13th of May.

77. Totanus hypoleucus (Linn.).

Common Sandpipers were noted on the first seven days of May.

Corrections to previous "Contributions to the Ornithology of the Sudan."

No. I. ('Ibis,' 1905, p. 301).

P. 321. No. 45.—The bird referred to as Lagonosticta nigricollis Heugl. was L. larvata Rüpp. (see 'Ibis,' 1908, p. 219).

P. 337. No. 104.—The Nightingale referred to as Lusciola golzi (Cab.) is L. philomela (Bechst.). I greatly regret this serious error. By a slip a wrong identification of my first specimen was given me by a high authority, and I named subsequent specimens from comparison with this skin. Plentiful as these "Sprossers" are in Khartoum during their autumn migration southwards, I have never seen them at all in the spring, and believe that they must return north on a different line.

P. 358. No. 175. Vinago waalia (Gm.)?—The note should be taken as applying to Vinago calva (Temm. & Knip).

P. 369. No. 215. Astur unduliventer (Rüpp.)?—This was Astur sphenurus Rüpp.

P. 382. No. 261.—For Rhynchops flaviventris read R. flavirostris Vieill.

No. II. ('Ibis,' 1908, p. 205).

P. 233. No. 118.—For Luscinia golzi (Cab.) read L. philomela (Bechst.).

No. III. ('Ibis,' 1909, p. 74).

P. 79. LAMPROCOLIUS CHALYBÆUS (Ehr.).—The birds from Tembura and Wau, in the Bahr-el-Ghazal, are L. CHALCURUS (Nordm.), in which the tail is strongly glossed with reddish violet. The female from Tawela, on the Nile, is L. CHALYBÆUS, with no violet on the tail, and agrees in this with all other specimens from that river.

P. 82. CAMAROPTERA BREVICAUDATA (Rüpp.).—If C GRISEOVIRIDIS (v. Müll.) is distinct, these two birds should stand under the latter name.

XIX.—*Notes on some Birds observed on the Trans-Siberian Railway Line.* By Staff-Surgeon KENNETH H. JONES, R.N.

As a means of transit from the Far East to Europe, the Trans-Siberian Railway is now so well known that it is unnecessary to say much about it as a highway.

Commencing at Vladivostok, on the Pacific coast of North-eastern Asia, it runs both east and north across Manchuria and Transbaikalia, through ten degrees of latitude, to Irkutsk, near the south-western shore of Lake Baikal, and thence almost due west over the great Siberian Plain to the Ural Mountains. After crossing the Urals into Europe, the line continues in a westerly direction for about two days' journey and then turns northward to reach Moscow. As a means of making a land-journey with ease and rapidity through many degrees of longitude, over a wide tract of the Palæarctic Region, and through the areas of distribution of many species of birds, it offers unequalled facilities to the ornithologist.

Moreover, birds, of all the wild inhabitants of this region, alone give an opportunity to an observer of making notes from the train itself, and this the more easily because of the slow progress and of the many, and often lengthy, stoppages which occur—frequently in the woods and steppes themselves.

It is, of course, an unavoidable misfortune that as the train runs by night, as well as by day, the traveller misses about two hundred miles during the darkness out of every twenty-four hours' journey, in the month of June. As this article is devoted to the birds observed from the line, I have only mentioned in it such features of the landscape through which I passed as may serve for a setting to the avifauna, with the names of some of the more important towns, in order that those who care to do so may note roughly the region referred to from day to day. I do not pretend that even with the aid of good binoculars it is possible to identify all the species which are seen, and many, of course, must escape notice altogether. At the same time a fair acquaintance with the birds of the Palæarctic Region, and the assistance of Mr. Dresser's invaluable work on the subject, have enabled me to make sufficient notes to be, I venture to hope, of some utility.

Nothing is more interesting than to notice the transition from the range of one species into that of another, so that in some cases, within an hour, it is possible to see the last of the one and the first of the other. Indeed, I think, from what I saw, that species tended to disappear suddenly at the limit of their area of distribution, as often as they did to gradually diminish in number, till they eventually vanished from the landscape altogether.

On the afternoon of June 1st I left Vladivostok, and the line at first ran through badly cultivated country covered with low scrub and the remains of silver-birch forest, having an arm of the sea on the left-hand side.

Carrion-Crows (*Corvus corone*) were much in evidence and by the shore Black-eared Kites (*Milvus melanotis*) were not uncommon. The Tree-Sparrow (*Passer montanus*) was abundant and apparently just as parasitic on man here as it is in China. The Eastern Common Swallow (*Hirundo gutturalis*), and the Nepalese Swallow (*H. striolata*) were plentiful at all the stations, and the nests of both species often adorned the eaves of the same building. Apparently the Nepalese Swallow is here a later breeding bird than the other species, for none of its nests appeared to be completed; at the same time I do not think that *H. gutturalis* had eggs; incubation, I am sure, had not commenced.

Herring-Gulls, probably *Larus vegæ,* were fairly numerous on the arm of the sea mentioned above.

June 2nd.—To-day the line ran through Manchuria, and the character of the country changed considerably, being hilly and well wooded, chiefly with silver-birch trees and firs, whilst rivers, though plentiful, were rather small and cultivation was scarce. Both species of Swallows were again seen, but only at the stations on the line. Sparrows were visible, but in much smaller numbers than yesterday.

The Daurian Jackdaw (*Corvus dauricus*) put in its first appearance to-day, but I only saw one or two individuals. Carrion-Crows (*Corvus corone*) were abundant, of Magpies (*Picus caudata*) there was a fair sprinkling, and I saw a few Streak-eyed Wagtails (*Motacilla ocularis*). Of Kites I saw only one, *Milvus melanotis,* but of Buzzards I observed several, while in some places Marsh-Harriers were quite numerous. Kestrels and Sparrow-Hawks were noticed, but not in any numbers.

The Eastern Ring-Dove (*Turtur orientalis*) was seen occasionally; the birds were always in pairs. In the late afternoon we ran into the large well-cultivated plain in which stands the town of Harbin. Here Carrion-Crows began to be scarce and the Eastern Rook (*C. pastinator*) put in its first appearance. The Rooks were very numerous, while their nests were observed on many of the trees near the line and round the houses of the natives; but I saw nothing at all like a rookery, such as we know at home, perhaps from the want of sufficient trees growing together in one place. Magpies also increased considerably in numbers in this part of the country, but I did not see many of their nests.

June 3rd.—In the morning we found ourselves in a rolling grassy country, beautifully green, but with very few trees, and apparently almost uninhabited. Here I saw a few Daurian Starlings (*Sturnia sturnina*), but only near the stations, and here also I first noticed the Daurian Stonechats (*Pratincola maura*) in great numbers and evidently breeding.

Wheatears were very numerous, sitting on the telegraph-wires along the route, but whether of the Common or the Isabelline form, it was impossible to say. I think, however, of the latter. I saw also many Thick-billed Shrikes (*Lanius tigrinus*), which likewise seemed very partial to the telegraph-wires. Marsh-Harriers were numerous. Here I first observed a few Lapwings (*Vanellus vulgaris*), which evidently had eggs or young, for I saw one bird fiercely chasing a Carrion-Crow away from the vicinity of its piece of territory. Skylarks were fairly numerous. Kestrels were unusually abundant.

About noon we began to traverse a rather more sandy country and at the same time the landscape became quite flat. Here Skylarks were abundant and I saw also Pallas's Short-toed Lark (*Calandrella pispoletta*), a bird I knew very well in Shantung. At 2.30 P.M. we reached Khailar, which stands in a sandy plain on the edge of an arm of the great Gobi Desert.

After leaving this place I saw many Mongolian Larks (*Melanocorypha mongolica*), while Pallas's Short-toed Larks became more numerous. Here also Kestrels and the Eastern Red-footed Falcon (*Falco amurensis*) became very abundant: the latter frequents similar localities in Shantung. I saw one Ringed Plover, but of which species I am not sure. The country, it must be understood, is not an absolute desert, for though sandy it is covered with abundance of wiry grass.

About an hour after leaving Khailar we came to a curious region in which the desert seems to be either advancing or receding, for, although it retained its usual character, the landscape was studded with numbers of fir trees, standing at considerable distances from one another, with here and there two or three together in a sort of clump. This region was characterized by the presence of large numbers of Hoopoes (*Upupa epops*), though after we left it I did not see any more of these birds until we had crossed the Urals into Europe. At 7 P.M. we reached Manchuria Station, which is the last in Chinese Territory.

June 4th.—In the morning we found ourselves in Transbaikalia, a very beautiful country, well wooded and with rapid clear rivers such as are seen in Wales and Scotland, but on a larger scale. In the forenoon I saw the Eastern House-Martin (*Chelidon lagopoda*) at a station, but I never noticed this species again.

To-day Daurian Jackdaws were in great abundance and in the afternoon I noticed with them an occasional example of *Corvus neglectus*, the eastern form of the Common Jackdaw, according to Dresser. Carrion-Crows were rather scarce. I twice saw Black-eared Kites (*Milvus melanotis*). Buzzards were fairly plentiful and I saw one or two Moor-hens on the pools by the side of the line. At dusk I saw an example of *Bubo maximus* on the top of a dead tree.

June 5*th*.—In the morning the train had arrived at the southern end of Lake Baikal, the mountains on the eastern side of which were in full view.

There was much drift-ice, in large blocks, on the shores of the lake, and numerous ice-floes on its surface, at some distance from the land. There were many Herring-Gulls by the shores of the lake or floating on its surface, but whether they were *Larus vegæ* or *L. cachinnans* it was impossible to make out, especially as the majority were in immature plumage. Buzzards were fairly plentiful, and of Black-eared Kites I observed one or two. Here I saw the only Raven (*Corvus corax*) which I noticed throughout the journey and a few Carrion-Crows (*C. corone*). What I took to be the Baikal White Wagtail (*Motacilla baicalensis*) was abundant near the lake-side. Common Swallows (*Hirundo gutturalis*) were fairly numerous near the stations, but the other species (*H. striolata*) had disappeared. To-day I saw the last of the Daurian Jackdaws and indeed of the Eastern Jackdaw (*Corvus neglectus*) also for a time. We got to Irkutsk, the capital of Siberia, about 2 P.M. on this day, and here I noticed *Passer montanus* and saw what I believed to be *P. domesticus*.

June 6*th*.—After leaving Irkutsk and until reaching the Ural Mountains, a distance of some thousands of miles, the country is either quite flat or very gently undulating, chiefly the former. June 6th was rather uninteresting; in the forenoon we passed through a country absolutely flat, but well wooded with silver-birch and fir trees, and in the afternoon through open prairie land with scattered strips and clumps of wood. In the forenoon I noticed the first Starlings (*Sturnus vulgaris*), and Jackdaws (*Corvus neglectus*) were plentiful. In the more open country Kestrels were numerous and I saw one or two Sparrow-hawks.

June 7th.—In the forenoon I saw the first Grey Crow (*Corvus cornix*), but many others appeared as the day went on. Jackdaws (*C. neglectus*) continued to be numerous, and Magpies, which I had not seen for some days, were again plentiful. Starlings were very abundant, and near every house, elevated on poles or fastened in trees, were little nesting-boxes for these birds, of which they gladly availed themselves. Carrion-Crows were scarce. Swallows were much in evidence and White Wagtails were abundant. I first saw Cuckoos (*Cuculus canorus*) to-day, and they were plentiful. Kestrels also were very numerous. To-day we passed through Mariinsk and Bogatyr.

June 8th.—The morning and forenoon of this day found us in a steppe country which was studded by numerous small shallow lakes fringed with reeds, whilst huge marshes spread on either side of the line as far as we could see.

We passed Kainsk in the forenoon. Ornithologically this day was full of interest and I saw many birds hereabouts which I had not observed elsewhere. Waterfowl, as might be expected, were abundant. Mallards were numerous and almost certainly breeding; and I saw a pair of Grey Lag Geese which probably had a nest, they were not far from the line and seemed quite undisturbed by the proximity of the train.

We passed several colonies of Black-headed Gulls (*Larus ridibundus*), but these birds were not very numerous. Coots (*Fulica atra*) and Little Grebes (*Podicipes fluviatilis*) were fairly plentiful, and in the drier parts of the country I saw a good many pairs of Lapwings (*Vanellus vulgaris*). In the early afternoon we left the lakes behind us and the train ran through open grassy country with occasional scattered groves of silver-birch trees, always at some distance from the line. At about 4 P.M. we reached Omsk. In this part of the country Stonechats (*Pratincola maura*) were extremely plentiful: no doubt the locality suited them well for breeding purposes. Here also I saw a great many Hobbies (*Falco subbuteo*); they were very tame and remained sitting on the telegraph-posts whilst the train steamed by. Cuckoos were very numerous and so were Pipits, on which, no doubt, the former were chiefly parasitic. Carrion-Crows, which had become rather scarce, again became numerous in the afternoon, but the Grey Crows continued to be plentiful—even in the marsh-land they did not diminish much. In the afternoon as we neared Omsk I first saw Rooks (*Corvus frugilegus*) and Jackdaws (*C. monedula*), but neither were very plentiful. At Omsk Sparrows (*Passer domesticus*) were well to the fore.

June 9th.—From this date until June 11th, when we reached Moscow, birds were not plentiful and I did not make many notes of interest.

In the forenoon we found that as we reached the neighbourhood of Cheliabinsk the country underwent a great change: still flat and grassy, it wore a look of cultivation and civilization greatly in advance of anything that we had seen since passing the well-ordered Manchurian plains about Harbin. Soon after mid-day we entered the Urals, and passed the border-line of Europe and Asia shortly after 4 o'clock. The Ural scenery was pretty but not at all grand: the mountains are neither rugged nor of any great height, but they are most beautifully wooded with forests of conifers.

Birds were scarce, and I only noticed Carrion-Crows, Grey Crows, Rooks, and Jackdaws, chiefly about Cheliabinsk. Starlings continued to be plentiful and in the Urals I saw a couple of Buzzards.

June 10th.—To-day the country was flat and woods were scarce, indeed I only saw one or two small copses of rather undersized oaks. I noticed a Hoopoe, the first I had seen since crossing the Gobi Desert near Khailar, some thousands of miles further east. I noticed the last Black-eared Kite to-day near Samara. Rooks, Crows, Jackdaws, and Starlings were also very numerous.

June 11*th*.—This day we reached Moscow, and it seemed curious to see, in the city itself, such birds as the Grey Crow and the Black Kite (*M. migrans*), neither of which were uncommon.

I was disappointed on my journey in not seeing any Thrushes, for I have always looked on Siberia as a stronghold of that family in the breeding-season ; no doubt they keep well within the forests at this time of year, which accounts for my failure to observe them.

In conclusion I may say that the climatic conditions were very much the same throughout the journey as they are in Great Britain at the same time of the year, except that at Vladivostok it was abominably hot. I did, however, observe once in Manchuria, and once again in Siberia, some patches of unthawed snow near the railway line.

XX.—*Field-Notes on Vultures and Eagles.*

By Brigadier-General H. R. Kelham, C.B., M.B.O.U.

Colonel Willoughby Verner's interesting work on the Wild Birds of Spain recalls to me birds'-nesting days near Gibraltar as far back as 1873, including the finding of nests of the Egyptian Vulture (*Neophron percnopterus*) and Bonelli's Eagle (*Nisaëtus fasciatus*), a description of which may be worth recording.

On reference to an old note-book I find :—

" Gibraltar, 15th April, 1873.—This has been one of many delightful days in the cork woods, birds'-nesting with Savile Reid, R.E.

" A short time ago, while hunting with the Calpe Hounds, we noticed Egyptian Vultures and a pair of Bonelli's Eagles sailing about some crags a few miles from the town of San Roque. To-day we revisited the spot.

" Riding up a sandy ravine, the steep scrub-clad hills on each side crowned by masses of precipitous rock, we disturbed a pair of Egyptian Vultures from what was evidently a nesting-place—a small cave in the face of a perpendicular and much weather-worn cliff standing like a ruined castle on the summit of the hillside. A scramble through the bushes and we soon reached the foot of the cliff, the cave not twenty feet above us; moreover, there was an easy way round to where a conveniently situated fig-tree offered a secure fastening for our rope, up which I climbed, as owing to the overhanging rock the place was more easily accessible from below than from above.

"The nest was on the floor of the cave and consisted of an untidy mass of sticks roughly lined with rags and bits of rubbish and goats' hair, while scattered around were bones, pieces of goat-skin, and other very evil-smelling remains.

"In the nest lay one large egg, the bluish-white ground-colour almost obscured by smudges and blotches of rich chocolate-brown.

"On the 25th April I took another egg from the same nest, and yet a third on the 8th May, all similar in appearance.

"The usual complement is two, a third is, I think, unusual."

The allied Indian species (*Neophron ginginianus*) I found common among the Outer Himalayas, especially round Dagshai, Sabathu, and the neighbouring hill-stations, at an elevation of about 7000 feet; apparently it is more rare at greater altitudes, anyhow during many expeditions into the high snow-ranges at Kashmir and Baltistan I saw but one, and that late in the summer.

Within a few hundred yards of the Neophron's nest, the finding of which I have described, but on the opposite side of the ravine, we discovered the eyrie of a Bonelli's Eagle.

It was very easy of access from the flat hilltop above, for a descent of about ten feet landed us on the ledge of a rock where the nest lay, in fact almost in the mass of sticks, which was lined with green leaves. It contained two handsome eggs, dull white with a few faint reddish blotches. The date was early in April, about the 8th or 10th.

From his description I gather that both these nests were discovered next year (1874) by Colonel Verner, in the same ravine though apparently not in quite the same sites.

On 28th Nov., 1886, while wild-fowl shooting at Mornie Tal, a lake at the foot of the Simla Hills, thirty miles east of Kalka, a Bonelli's Eagle suddenly swooped down and seized one of my wounded ducks, and would have carried it off if I had not shot the Eagle.

I also obtained *Nisaetus fasciatus* near Candia in Crete during November, 1896.

During many years spent in Northern India, among the outer ranges of the Himalayas after Chamois, or Gooral, as they are there called, with several expeditions into the higher ranges of Kashmir and Baltistan stalking Ibex, there was no bird I saw more of than the Great Bearded Vulture, or Lammergeyer (*Gypaëtus barbatus*). Everywhere throughout the hills at an elevation of from 4000 to 8000 feet it was plentiful, especially round Dagshai *, Kasauli, and Sabathu, during the winter; I frequently saw it, in company with the white-backed *Gyps bengalensis*, feeding on the refuse from the slaughter-houses. I much doubt if it kills prey for itself, anyhow I never even heard of it doing so.

In Kashmir I used to watch the birds for hours and often saw them pass over flocks of goats, and on more than one occasion pass and repass female Ibex with young kids without taking any notice of them, nor did the animals shew the slightest alarm, which they certainly would have done if the birds had been a source of danger.

During a winter spent at Dagshai the Lammergeyers were always with us, and though they used to sail along the hill-side, often within a few yards of the fowls and pigeons which fed in our Mess Compound, I never saw any hostile act, though they would pick up bones or fragments of meat.

The soldiers, in fact most non-ornithological Europeans, invariably talked of these birds as Golden Eagles, misled by the ruddy buff colour of the head and neck of the mature specimens, which gives them a decidedly golden appearance.

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* Dagshai is a small military station in the Outer Himalayas, thirty miles south of Simla.

On the wing the Lammergeyer is easily identified, even at a considerable distance, by its long pointed wings, very wedge-shaped tail, and even, gliding flight—an occasional flap, and with scarcely another movement of its wings it sails along, skimming close over the ground, following every undulation of the hillside as it works backwards and forwards in long "beats," and searching every fold of the ground for food.

During the spring I found it numerous in the Murree Hills (10,000 feet), and I knew of a nesting-place in Changla Gully. In my diary is :—

"Changla Gully, N.W. Himalayas, 4th May, 1896. This evening the sunset was glorious beyond description, the sun sinking in a glow of light over the 'perpetual snows' of Kashmir, crimson, fading to rose, purple, and every conceivable tint, while brilliant flashes of lightning played round the snowy summit of Nanga Parbat (27,000 feet) and other Himalayan giants. The Great Bearded Vulture is quite in keeping with this grand scenery. This evening while sitting among the highest peaks round Changla, admiring the view, several of these huge birds came sailing close past me: my dog seemed to excite them, for many, as they swooped by, uttered hoarse croaks, others settled on a dead pine close below, in fact they were unusually confiding and gave me an exceptional chance of studying them."

They breed early in the year in caves on the face of the most inaccessible crags, often where the cliff is overhanging, so that the approach from above is almost as difficult as that from below.

During the winter of 1887, while chamois-stalking among the Sirmoor mountains, I found several nesting-places, and in the early spring of the next year three pairs of these birds bred in some very precipitous cliffs twelve miles east of Dagshai, where they doubtless still nest. These cliffs were very "happy hunting-grounds" of mine. One January day, dull and snowy, I was stalking chamois, and when in rather a fix, on a very nasty piece of cliff, discovered a Bearded Vulture's eyrie. At the time I was near a huge beetling crag, in a crevice of which was the nesting-place: it was apparently, at least without ropes and careful arrangements, perfectly inaccessible from either above or below.

According to my shikari, the Vultures breed in April; but I think that the nest contained eggs on this occasion, the 18th of January, as a magnificent golden-headed bird came sailing along the face of the cliff and disappeared into the cave, which had evidently been used for years, the rocks being much soiled by the birds and their young.

During the summer, after the snow has melted, they spread over the higher ranges, and I saw them far north, in Baltistan, Astor, and nearly to Gilgit, but not in such numbers as among the Outer Himalayas. Westward, I saw them among the Afghan Hills, and in March 1889 there were several about the cliffs overlooking Ali Musjid, in the Khyber Pass.

The Brown Vulture (*Gyps indicus*) and the white-backed *G. bengalensis* were both common round Dagshai and bred near that place, where on one occasion I had a great Vulture-afternoon—quite an "At Home, from 3 to 5 P.M." I placed a carcase on the hillside, hid near and had a close view of the scene which ensued. At first only a few stray Vultures were visible soaring above, some comparatively low down, others tiny specks high up against the blue sky. As usual, the Kites and Crows were the first arrivals, and by the noise and commotion they made I think attracted the attention of the Vultures.

Anyhow I came to the conclusion that the carcase was first discovered by the lower stratum of Vultures either by sight or else by noticing the gathering together of the clamoring Crows. Then other Vultures observing from the manner of the discoverers that they were off to something good, flocked towards them, others still higher up, still farther away, followed suit, the dark specks high up in the clouds descended nearer and nearer, till in a short time the carcase was alive with a struggling, squabbling mass of these huge birds.

A more rare species, the Black Vulture (*Otogyps calvus*), I found undoubtedly breeding among the Murree Hills in

May, also in the wooded valleys of Sirmoor, forty miles east of Simla.

"Sirmoor, 15th April, 1887. While big-game shooting, I to-day crossed the Jellal River and ascended a thickly-wooded ridge separating it from the next valley.

"At the head of a jungly ravine and overhanging its steep banks I came on a tree, of no great height, with a huge nest on its top.

"The nest was only about thirty feet from the ground, and standing on the hillside above I could look down right into it, having a good view of the owner. It was a Black Vulture, sitting very close, in fact it was only when I shouted and threw sticks that it could be induced to move; then, standing up, it opened its beak and spread its wings by way of intimidation, at the same time disclosing to view one large white egg on which it had been sitting. The tree was by no means easy to climb, being covered with a tangled mass of wild vine, to say nothing of being alive with red ants, which, to my detriment, resented being disturbed."

The nest, built in the crown of the tree, was an enormous mass of sticks with finer ones as a rough lining. The large, round, white egg—the full complement—was very nearly hatched.

During February of the next year I found the Black Vulture in the Nepal Terai, and saw an individual, in company with the common brown species, feeding on the carcase of a bear which I had shot.

XXI.—*On the Occurrence of* Pseudoscolopax taczanowskii *in Western Siberia.* By H. E. Dresser.

(Plate VII.)

The Semipalmated Snipe, or so-called "Snipe-billed Godwit," is certainly one of the rarest and least known of the Palæarctic Waders, and up to the present time its breeding-range has been undiscovered. First described by Blyth in 1848 as

Macrorhamphus semipalmatus from a specimen obtained near Calcutta in the winter, it was again described and figured by Verreaux in 1860 (Rev. et Mag. de Zool. p. 206, pl. 14) as *Macrorhamphus taczanowskii* from a specimen obtained in Dauria.

The two specimens now figured, a male and a female in full breeding-plumage, were obtained on the 12/25 May, 1908, not far from Tara, in the valley of the Irtysh, Tobolsk Government, Western Siberia. Tara is situated on the left bank of the Irtysh River, about two hundred miles below Omsk. The valley at that point is only about four kilometres broad, in some places widening to six or seven kilometres. The right bank is the higher, and is covered with pine and fir wood, forming there the southern portion of the Siberian "taiga." The left bank is broadly bordered by small non-evergreen woods, interspersed by steppe (the so-called steppe-forest belt of Russian geographers), but gives place further south to the true treeless steppe. Between these banks and the bed of the river is a wet meadow intersected by marshy rivulets and streams and covered with small lakes and ditches overgrown with reeds, swamps either treeless or with small unhealthy pine-trees, and even mossy bogs near the right bank. This meadow is uneven, with hollows, while parallel with the river are higher beds covered here and there with low bushes of *Salix*, and on the left side of the river is a narrow belt of high old *Salices*. The meadow, especially on the left side of the river, is overflowed when the water rises in the spring.

About a mile from Tara a small river called the Arkharka, only about five miles long, flows into the Irtysh, and at its mouth the meadow is very low, slimy, and treeless. In 1908 the ice on the Irtysh broke up between the 6th and 10th of May, new style, and on the 25th of May the water was still very high, so that the lower parts of the valley and that of the Arkharka were under water, with only small strips of land visible here and there. The grass was still very short, the leaves of the birch trees very small. Hooded Crows and Magpies had eggs highly incubated, or young just hatched;

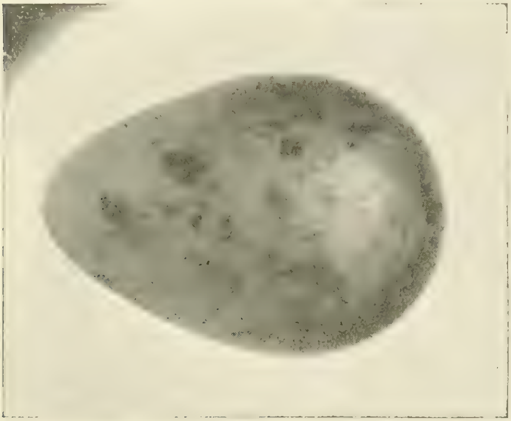
the Greater Spotted Woodpecker, Common Snipe, and Lapwing had fresh eggs, and the nests of the Red-legged Falcons (*Falco vespertinus obscurus*) were ready, though as yet they were empty.

On this day three local sportsmen, Messrs. Grabinsky, Tveritin, and Florinsky, were on the Irtysh River in a boat, and about 11 o'clock in the forenoon observed two Waders at the edge of the flooded meadow near the mouth of the Arkharka, one of which was probing the muddy ground, whilst the other was walking about close to its mate. In their manners they reminded the sportsmen of Greenshanks, but on account of their rust-coloured plumage it was concluded that they must be Godwits. They were quite tame, even when approached within forty paces, and Mr. Florinsky killed both birds with the same shot. As they seemed to be somewhat uncommon Mr. Florinsky brought them to Mr. V. E. Ushakow, a correspondent of Mr. S. A. Buturlin, who skinned them. Both were in a somewhat poor condition and rather lean, the stomachs containing small shells and river-ooze. Mr. Ushakow, with the assistance of Mr. Buturlin's 'Synoptical Tables of the Birds of the Russian Empire' (in Russian), correctly identified the birds; but, inasmuch as the present species had not been recorded from further west in Siberia than Chita in Dauria, he was doubtful as to whether he was right, and sent the birds to Mr. Buturlin. On skinning the female bird Mr. Ushakow found in the lower part of the oviduct an egg fully coloured and quite ready for exclusion, which he carefully extracted, measured, and photographed. Unfortunately before he sent me this egg a mouse got at it and so damaged it that I have been unable to repair it sufficiently to photograph it in colour, so I have reproduced the photograph (p. 421) taken by Mr. Ushakow.

This egg is somewhat glossy in the surface of the shell, like that of a Snipe, but in form and general coloration is not unlike that of a Godwit, though the ground-colour is rather more grey in tone and at the larger end there are two sharp reddish-brown stripes, such as are often found in eggs of *Totanus glareola*, but never in those of *Limosa*; the greyish-brown surface-spots are more numerous and denser at the larger end. When blown and whole this egg measured 51·1 by 37 mm. (2 by 1·45 inch) and weighed 2·11 grammes.

Mr. Buturlin has kindly placed me in direct communication with Mr. Ushakow, and has sent me all his notes with the egg and the two birds, to enable me to write this article.

Text-fig. 9.



Egg of *Pseudoscolopax taczanowskii.*

The present bird is not a Godwit, but appears to me to be intermediate between *Macrorhamphus* and the American Willet (*Symphemia semipalmata*).

The Semipalmated Snipe evidently breeds in the valley of the Irtysh, and I have asked Mr. Ushakow to use every endeavour to procure and send me the eggs, which I trust he will succeed in doing.

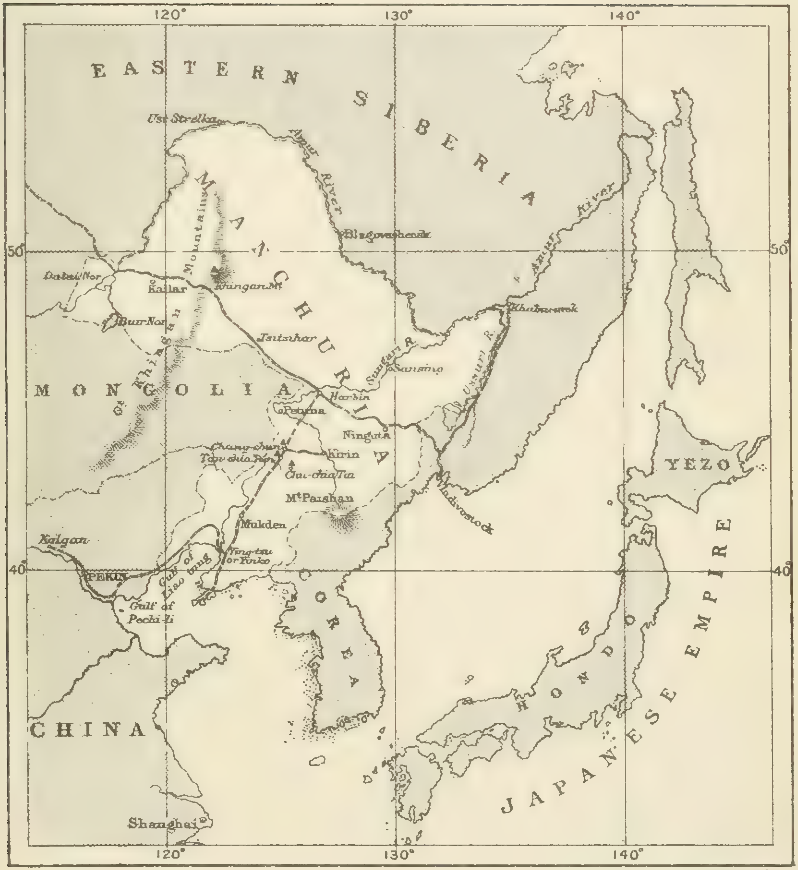
XXII.—*The Birds of Manchuria.*

By Collingwood Ingram, M.B.O.U.

(Plate VIII.)

I. Introduction.

Two years ago I journeyed from Vladivostock to Berlin. As the train travelled slowly through the wooded valleys of the Khingan Mountains and across the park-like meadowlands of North Manchuria, I was much impressed by the ornithological promise of that beautiful but comparatively little known country. Upon my return home I immediately searched the zoological libraries of London for information on the subject—but could find none there. Of the Ornis of Manchuria very little was known. In the "eighties," Mr. (now Sir Evan) James brought back a small but interesting collection from South Manchuria, while fifteen years later a certain Capt. Karpow, then in the Russian Army and quartered at Yingtzu, made another small collection, which I believe is now in the St. Petersburg Museum. These two collections, both from the southern part of the country, constitute all that is known to me of Manchurian birds. Realising this and hoping that the country would prove a fruitful field for ornithological research, I wrote to my friend Mr. Alan Owston, of Yokohama, and with his assistance arranged that a Japanese collector should visit Manchuria during the summer of 1908. Although the results of this expedition were disappointing in the sense that they yielded no novelties, they were nevertheless extremely interesting from another point of view—they served to fill in a considerable gap in our knowledge of the geographical distribution of East-Asian birds. After all, when the extreme severity of its winter climate is taken into consideration, it is hardly surprising to find that Manchuria can boast of no local races of birds. According to Sir Evan James the temperature falls to below −49° Fahr. in the north, while even on the coast it reaches −10° Fahr. The summer, however, is temperate,


120°
130°
140°
50°
40°
EASTERN SIBERIA
Ust Strelka
Amur River
Blagoveshensk
MANCHURIA
Gt. Khingan Mountains
Khingan Mt.
Dalai Nor
Hailar
Buir Nor
Tsitsihar
MONGOLIA
Harbin
Petuna
Sungari R.
Sansing
Ninguta
Chang-chun
Tau-chia-Tun
Kirin
Clai-chia-Tia
Mt. Paishan
Mukden
Kalgan
PEKIN
Ying-tzu or Yinko
Gulf of Liao tung
Gulf of Pechi-li
COREA
Amur River
Khabarovsk
Ussuri R.
Vladivostock
YEZO
HONDO
JAPANESE EMPIRE
CHINA
Shanghai

Leonardson & Co.

MAP OF MANCHURIA

Scale of Miles

100 0 100 200 300 400 500

Collecting stations marked thus ▲

though very wet, rain falling "almost without intermission" from May to the end of August.

The resident species of birds seem to be comparatively few in number, while, on the whole, the avifauna appears to resemble that of Siberia very closely, and in North Manchuria might almost be said to be boreal in character. This is especially noticeable in the various races of Spotted Woodpeckers and Marsh-Tits, which, in some cases, appear to be almost identical with those existing in the extreme north of Europe. *Turdus dubius*, *Fringilla montifringilla*, and *Calcarius lapponicus* are among the birds that I was surprised to find so far south during the breeding-season. Below Kirin the avifauna naturally tends to become more "tropical" or like that of China: as examples of this, I might mention *Halcyon coromanda*, *Eurystomus calonyx*, and *Terpsiphone incii.*

Dr. Valentine Bianchi has compiled a brief catalogue of the birds collected by Capt. Karpow * (comprising 51 species), and this has been published in the 'Annuaire du Musée de St. Pétersbourg' for 1902. Sir Evan James's collection is now in the Natural History Museum, where I have been able to make a careful examination of all his specimens. Reference to these will be found in the following pages, the collector's initials appearing in brackets after each entry. Perhaps it is hardly necessary to say that the list of birds contained in the present paper is anything but complete. I have no doubt that when the country becomes better known there will be many species to add to the number. However, I trust that my work will serve at least as a foundation for the future study of Manchurian ornithology.

In his interesting book, 'The Long White Mountain,' Sir Evan James describes Manchuria as being essentially a highland country; almost the entire south and east being occupied by the Pai-shan and other mountains, while the Khingans occupy the north-western corner. The same writer goes on to say that "The plain country is limited to the fertile alluvial tract in the west of Fêng-tien (or Liao-Tung Province), on the banks of the Liao Ho, and to the north and west of Kirin, in the region of Petuna, and where the Nonni drains the vast area of undulating steppes."

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* In that paper, written in Russian, the town Yingtzu is spelt Inkow, or Inkou.

My Japanese collector reached the Khingan Mountains on April 17th and stayed at a station of that name on the Trans-Siberian Railway until June 30th. He informs me that this station is the highest point on the line and is situated about 3500 ft. above sea-level. Thence he went south to Chang-chun and afterwards to two neighbouring villages called Fan-chia Tun and Chu-chia Tai. He returned to Japan early in October. In the accompanying map (Plate VIII.) I have marked the places visited by him, so that they may be seen at a glance; I have also shown most of the towns mentioned on Sir Evan James's labels.

The works chiefly cited in my paper are Taczanowski's 'Faune ornithologique de la Sibérie Orientale,' Mr. Dresser's 'Manual of Palæarctic Birds,' and Dr. Hartert's 'Vögel der paläarktischen Fauna.' In referring to them, I have merely given the author's name, followed by the number of the page. Sir Evan James in his excellent work on Manchuria has unfortunately devoted but little space to ornithology.

In conclusion, I must express my thanks to Mr. Alan Owston, who was good enough to make all the necessary arrangements in connexion with the expedition: while I am also deeply indebted to Dr. Bowdler Sharpe and Mr. Ogilvie-Grant for their great kindness during my work in the Natural History Museum, and last, but not least, to Sir Evan James for very kindly looking through my proof-sheets before they went to press.

II. LIST OF THE BIRDS OF MANCHURIA, WITH REMARKS.

1. **TURDUS DUBIUS** Bechst. Bechstein's Thrush.

Tacz. p. 289; Dresser, p. 7.

a. ♀. Khingan Mts., alt. 3500 ft. May 13, 1908.
b. ♂. ,, ,, ,, 3400 ft. ,, 19, 1908.

Iris brown; feet blackish brown; bill dark horn-brown.

As this Thrush breeds in Siberia (its eggs were first taken by Mr. Popham in 1875 in the valley of the Yenesei) and migrates in winter to China and Japan, I fully expected to find it in Manchuria as a migrant; but it was somewhat surprising to procure it there as late as May 19th—a date which suggests a possibility of its remaining to nest in the mountains of North Manchuria.

2. Turdus naumanni Temm. Red-tailed Thrush.

Tacz. p. 294; Dresser, p. 9.

a, b, c. ♂ ♂ ♀. Chang-tsai-Ling, S. Manchuria. Nov. 19, 1886. (*E. J.*)

Probably wintering in South Manchuria. Chang-tsai-Ling is roughly seventy miles east of Kirin.

3. Turdus obscurus Gm. Dusky Thrush.

Tacz. p. 306; Dresser, p. 13.

This bird is included in the present paper on the authority of Bianchi, who records a specimen from Yingtzu, May 10, 1901.

4. Turdus pallidus Gm. Pale Thrush.

Tacz. p. 307; Dresser, p. 15.

a, b. Hsiao Shan Forest. July 6, 1886. (*E. J.*)

These two examples, obtained by Sir Evan James, are both fledglings and could only just have left the nest when shot. Seebohm examined them and described them in his 'Monograph of the Turdidæ' (vol. ii. p. 186). He was doubtless able to assign them to the present species by the characteristic broad white tips to their tail-feathers.

They were shot in the valley of the Sungari, about seventy miles from the source of the river.

5. Geocichla sibirica Pall. Siberian Ground-Thrush.

Tacz. p. 282; Dresser, p. 19; Ingram, Ibis, 1908, p. 134.

A male was procured by Capt. Karpow at Yingtzu, on May 10, 1901.

6. Monticola gularis (Swinhoe). White-throated Rock-Thrush.

Tacz. p. 323; Dresser, p. 22.

a, ♂. Khingan Mts., alt. 3800 ft. May 28, 1908.

b. ♀. „ „ „ „ May 29, 1908.

Iris very dark brown; feet horn-coloured; bill black.

The male is in full breeding-plumage and its colouring is exceptionally bright, all the feathers being quite free from the brown margins shown in the winter dress. The chestnut of the rump and under parts is darker and richer than in any of the examples in the British Museum. The breeding-area of this beautiful Rock-Thrush is probably restricted to E. China, Manchuria, and the extreme south-east of Siberia. Bianchi records a male from Yingtzu, May 14, 1901.

7. Pratincola maura Pall. Siberian Stonechat.

Tacz. p. 355; Dresser, p. 46; Ingram, Ibis, 1908, p. 138.

a–e. 4 ♂, 1 ♀. Khingan Mts., alt. 3400–3600 ft. May 20 to June 25, 1908.

Iris brown; bill and feet black.

These birds were obviously nesting in the Khingans; in Japan nidification commences during the first and second week in May. Bianchi records the Siberian Stonechat from Yingtzu, Oct. 11, 1901.

8. Ruticilla aurorea (Gm.). Daurian Redstart.

Tacz. p. 326; Dresser, p. 52.

a, *b*. ♂ & ?. Hsiao Shan: Chang Pai-shan Forests. July 6, 1886. (*E. J.*)

9. Calliope camtschatkensis (Gm.). Siberian Ruby-throat.

Tacz. p. 335; Dresser, p. 65.

a, *b*. ♂ ♂. Khingan Mts., alt. 3400 ft. May 22, 1908.

Iris black-brown; feet greyish-brown; bill black.

This bird, no doubt, nests in the Khingan Mountains; it is known to do so in Mongolia and North China (Tacz. p. 337).

A male was killed near Yingtzu on April 28, 1901 (*Bianchi*).

10. Nemura cyanura (Pall.). Red-flanked Bluetail.

Tacz. p. 343; Dresser, p. 69; Ingram, Ibis, 1908, p. 139.

a, b. ♂ ♀. Khingan Mts., alt. 3500–3700 ft. May 6 and 12, 1908.

Iris dark brown; feet brown; bill blackish.

11. Larvivora cyanea (Pall.). Siberian Blue Robin.

Tacz. p. 338; Dresser, p. 70; Ingram, Ibis, 1908, p. 137.

a, b. ♂ ♂. Khingan Mts., alt. 3200–3700 ft. June 6 and 8, 1908.

Iris dark brown; feet plumbeous-brown; bill brown.

This species probably visits Manchuria to breed in the mountains; in Japan it is essentially a bird of the hills.

12. Phylloscopus borealis (Blas.). Eversmann's Willow-Warbler.

Tacz. p. 254; Dresser, p. 99; Hart. p. 517.

a, b. ♂ ♀. Chu-chia Tai, Kirin Province. Aug. 17, 1908.

These birds were evidently passing through Manchuria on their southward migration.

13. Phylloscopus plumbeitarsus Swinh. Middendorff's Willow-Warbler.

Tacz. p. 259; Sharpe, Hand-l. vol. iv. p. 217; Hart. p. 511.

a. ♂. Khingan Mts., alt. 3400 ft. June 1, 1908.
b, c. ♂. „ „ „ 3700 ft. June 3 and 5, 1908.
d. ♂. „ „ „ 3600 ft. June 8, 1908.
e, f. ♂ ♀. Khingan Mts., alt. 3400 ft. June 11 and 14, 1908.
g. ♀. Khingan Mts., alt. 3600 ft. June 16, 1908.
h. ♂. Chu-chia Tai, Kirin Province. Aug. 30, 1908.

Iris blackish-brown; feet greyish-brown; bill blackish above.

Evidently breeding in the mountains and working southward, through Central Manchuria, in August.

14. PHYLLOSCOPUS SUPERCILIOSUS (Gm.). Yellow-browed Willow-Warbler.

Tacz. p. 264; Hart. p. 518.

a, b, c, d. ♂ ♂ ♂ ♂. Khingan Mts., alt. 3400–3800 ft. May 13–17, 1908.

e. ♂. Chu-chia Tai, Kirin Province. Aug. 30, 1908.

f. ♂. Fan-chia Tun, Kirin Province. Sept. 12, 1908.

g, h. ♂ ♀. Near Kirin. 1886. (*E. J.*)

Iris dark hazel; feet light brown or horn-brown; bill black-brown above.

15. PHYLLOSCOPUS PROREGULUS (Pall.). Pallas's Willow-Warbler.

Tacz. p. 267; Sharpe, Hand-l. iv. p. 215; Hart. p. 523.

a, b. ♂ ♂. Khingan Mts., alt. 3600 ft. May 17, 1908.

Iris dark brown; feet horn-brown; bill blackish-brown above.

My birds are typical *P. proregulus*, both in colour and wing-formula (*cf.* Gätke, Ibis, 1889, p. 578).

Capt. Karpow procured this Willow-Warbler at Yingtzu, April 3, 1901 (*Bianchi*).

16. PHYLLOSCOPUS FUSCATUS (Blyth). Dusky Willow-Warbler.

Lusciniola fuscata Tacz. p. 272; Dresser, Man. Pal. B. p. 125.

Phylloscopus fuscata Hart. p. 528.

a, b, c. ♂ ♂ ♀. Khingan Mts., alt. 3400–3500 ft. May 19–28, 1908.

d, e. ♂ ♂. Khingan Mts., alt. 3600–3800 ft. June 3 and 25, 1908.

Iris dark brown; feet horn-brown; bill blackish-brown above.

Dresser (Man. Pal. B. p. 126) says that this species "frequents low bushes on the plains and at low altitudes in the hills, especially in damp localities." That it is not, however, entirely a lowland species is shown by my series of skins procured at elevations varying from 3400 ft. to 3800 ft., while Radde found it up to an altitude of 7000 ft. on the Tarei-nor and Middendorff met with it up to the summits of the Stanovoi Mountains. I prefer to follow Hartert and place this species among the *Phylloscopi*; in habits, as well as in general appearance, it appears to belong to this genus rather than to *Lusciniola.*

Bianchi records the Dusky Willow-Warbler from Yingtzu, Sept. 11, 1901.

17. ACROCEPHALUS ARUNDINACEUS ORIENTALIS. Eastern Great Reed-Warbler.

Hart. p. 558; Dresser, p. 120.

Calamoherpe turdoides orientalis, Tacz. p. 234.

a, *b*. ♂ ♀. Chang-chun, Kirin Province. July 15 and 16, 1908.

This Warbler has also been procured at Yingtzu, July 1, 1901 (*Bianchi*).

18. ACROCEPHALUS BISTRIGICEPS Swinh. Schrenck's Reed-Warbler.

Tacz. p. 236; Dresser, p. 121; Hart. p. 565; Ingram, Ibis, 1908, p. 144.

a–k. ♂ ♂ ♀ ♂ ♂ ♀ ♀. Khingan Mts., alt. 3400–3500 ft. June 15–25, 1908.

l. ♂. Chang-chun, Kirin Province. July 14, 1908.

Iris blackish-brown; feet dark horn-brown; bill blackish-brown.

Capt. Karpow twice procured this Warbler at Yingtzu, a male on July 1, and a second on Sept. 29, 1901 (*Bianchi*).

19. ARUNDINAX AËDON (Pall.). Thick-billed Warbler.

Hartert, p. 554.

Arundinax aëdon Tacz. p. 227.

Lusciniola aëdon, Dresser, p. 124.

a. ♀. Khingan Mts., N. Manchuria, alt. 3400 ft. June 6, 1908.

b, *c*. ♂ ♂. Khingan Mts., N. Manchuria, alt. 3400 ft. June 11, 1908.

Iris dark brown; feet dark greyish-brown; upper mandible walnut-brown.

20. LUSCINIOLA SCHWARZI Radde. Radde's Warbler.

Tacz. p. 276; Dresser, p. 127.

a, *b*, *c*. ♂ ♂ ♂. Khingan Mts., alt. 3400–3600 ft. May 29 and 30, 1908.

d, *e*. ♂ ♂. Khingan Mts., alt. 3700 ft. June 16 and 18, 1908.

Iris blackish-brown; feet horn-coloured; bill blackish above, lighter below.

21. LOCUSTELLA LANCEOLATA (Temm.). Lanceolated Grasshopper-Warbler.

Tacz. p. 244; Dresser, p. 132; Hart. p. 553.

a, *b*. ♂ ♀. Khingan Mts., alt. 3500 ft. June 6 and 8, 1908.

Iris dark brown; feet cinnamon-coloured; upper mandible blackish-brown.

In the summer this species is widely distributed throughout Siberia, but I do not know of its ever having been found breeding south of that country; its occurrence in Manchuria as late as June 8th is, therefore, interesting.

22. LOCUSTELLA CERTHIOLA (Pall.). Pallas's Grasshopper-Warbler.

Oates, F. Brit. Ind. i. p. 352; Tacz. p. 239; Dresser, p. 133; Hart. p. 550.

a. ♂. Khingan Mts., alt. 3300 ft. June 8, 1908.

b, *c*, *d*. ♂ ♂ ♀. Khingan Mts., alt. 3400 ft. June 14, 1908.

e, *f*. ♂ ♂. Khingan Mts., alt. 3300 ft. June 18, 1908.

Iris dark brown; feet cream-coloured; bill blackish-brown.

With one exception, these examples from the Khingan Mountains are all in very bright plumage, the light margins of the feathers on the back (and especially those of the wings) being broad and shewing in strong contrast to their blackish centres. On the other hand, the example *a* is singularly dark, slightly speckled on the breast, and with the margins of the feathers of the back and wings brown and dark russet-brown, instead of whitish-buff and pale olive-brown. Indeed this last bird differs so markedly from the others that it is difficult to believe that it belongs to the same species. There are, however, several dark specimens in the National Collection that agree perfectly with my Manchurian skin, but these (known to the older authors under the name of *L. rubescens* Blyth) were mostly procured in winter. Perhaps they are all young birds; but if immaturity is the explanation of this dark phase, it is somewhat curious to find it in an example killed as late as June 8th, and in an individual that must necessarily have passed through both the autumn and spring moults.

Crossing from Japan to Vladivostock in June 1907, a Grasshopper-Warbler came on board our steamer. It was in such an exhausted condition that it allowed me to approach within two or three feet of it, so close, in fact, that I made several attempts to catch it in my hands. I am confident that it belonged to the present species, which is the more interesting as this Warbler was hitherto unrecorded from Japan.

23. Locustella fasciolata (Gray). Gray's Grasshopper-Warbler.

Tacz. p. 249; Dresser, p. 135; Hart. p. 545.

a, b. ♂ ♂. Khingan Mts., N. Manchuria, alt. 3800 ft. June 19, 1908.

c, d. ♂ ♂. Khingan Mts., N. Manchuria, alt. 3800 ft. June 20, 1908.

e. ♂. Khingan Mts., N. Manchuria, alt. 3900 ft. June 26, 1908.

f. ♂. Khingan Mts., N. Manchuria, alt. 4000 ft. June 27, 1908.

Iris brown; feet drab; bill blackish-brown.

Gray's Grasshopper-Warbler was probably breeding in the Khingan Mountains, for examples were procured as late as June 27th. Although nothing definite is known of its nesting-habits, this bird is supposed to breed in Eastern Siberia; but Dybowski and Godlewski only found it rarely, and apparently as a migrant, in the environs of Irkutsk, though the latter heard it in July during his travels in Yeniseisk. It winters in the Malay Archipelago. In the young of this Warbler the plumage is much diffused with yellow, and most of the examples in the British Museum, killed during winter in the Malay Islands, are in this dress. My birds are all in breeding-plumage, and are russet-brown above, with the lower neck ashy grey.

24. ACCENTOR ERYTHROPYGIUS (Swinh.). Red-rumped Alpine Accentor.

a. ♀. Mt. Pai-shan, 7000 ft. July 14, 1886. (*E. J.*)

Iris blackish; feet pinkish.

25. ACREDULA CAUDATA (Linn.). Long-tailed Tit.

Tacz. p. 443; Hart. p. 382.

a. Near Ninguta. Oct. 1886. (*E. J.*)

This specimen is in a very poor state of preservation; the bird was moulting heavily when shot.

26. PARUS CINEREUS MINOR. Japanese Great Tit.

Hellmayr, Mon. Paridæ, p. 104.

a. juv. ♀. T'ou-i-pi Ho, Pai-shan Forests. July 17, 1886. (*E. J.*)

Iris brown.

27. PARUS BOREALIS BAICALENSIS. Baikal Marsh-Tit.

Tacz. p. 437; Hellmayr, Mon. Paridæ, p. 65.

a. ♂. Khingan Mts., 3500 ft. April 22, 1908.

b, c, d. ♂ ♂ ♀. Khingan Mts., 3500–3800 ft. May 3 and 6, 1908.

Iris dark brown; feet greyish-black; bill blackish.

These examples are large and very grey above and have the under parts almost white. Average measurements: wing 2·65 in.; tail 2·85 in.

28. Parus palustris brevirostris. Short-billed Marsh-Tit.

a. ♀. Khingan Mts., 3900 ft. April 29, 1908.
b. ♂. " " 3700 ft. May 2, 1908.

Iris dark brown; feet greyish-black; bill blackish.

Compared with the others, two of my birds have slightly browner backs, and a faint metallic or steely sheen on the black part of their heads. Their bills are decidedly short and thick, and their wing-feathers are distinctly margined with greyish-white. Sir Evan James's bird, from Chang-tsai-Ling, is still browner and, if anything, the bill is even more abrupt. I have therefore referred it to Taczanowski's *crassirostris*, but the difference between these two races seems to me to be very slight.

29. Parus palustris crassirostris. Great-billed Marsh-Tit.

a. ♂ ?. Chang-tsai-Ling, 80 miles E. of Kirin. Nov. 1886. (*E. J.*)

The measurements are: wing 2·5 in.; tail 2·7 in.

30. Sitta amurensis. Amur Nuthatch.

a. ♂. Lao-sung Ling. 1886. (*E. J.*)
b, c, d. ♀ and ? ?. Lao-sung Ling. 1886.

Sir Evan James writes (Oct. 31): "We then crossed the top of the ridge called Lao-sung Ling, 1400 feet elevation, and descended into the vale of Tumen." This pass is about forty-five miles south of Ninguta.

31. Motacilla lugubris leucopsis. White-faced Wagtail.

Tacz. p. 366; Dresser, p. 198.

a, b. ♂ ♂. Khingan Mts., alt. 3500 ft. June 3 and 4, 1908.

Iris very dark brown; feet and bill black.

32. Motacilla alba baicalensis. Siberian White Wagtail.

Tacz. p. 361; Dresser, p. 201; Hart. p. 304.

a–f. ♂ ♂ ♀ ♂ ♀ ♀. Khingan Mts., alt. 3400–3500 ft. April 30 to May 18, 1908.

Iris very dark brown; feet and bill black.

The three species of Pied or White Wagtails were all apparently breeding in the same area.

33. Motacilla alba ocularis. Streak-eyed Wagtail.

Tacz. p. 364; Dresser, p. 202; Hart. p. 307.

a, b. ♀ ♀. Gt. Khingan Mts., alt. 3400 ft. May 6 and 12, 1908.

Iris very dark brown; feet and bill black.

34. Motacilla boarula melanope. Eastern Grey Wagtail.

Tacz. p. 375; Hart. p. 300; Ingram, Ibis, 1908, p. 152.

a–e. ♂ ♂ ♀ ♂ ♀. Khingan Mts., alt. 3500–3600 ft. May 13–29, 1908.

f–l. ♀ ♂ ♂ ♂ ♂ ♂ ♂. Khingan Mts., alt. 3400–3600 ft. June 1–26, 1908.

m. ♀. Chu-chia Tai, Kirin Province. Aug. 29, 1908.

n, o. Lao-ling, near Tang Ho Kou. June 30, 1886. (*E. J.*)

Iris very dark brown; feet blackish; bill blackish.

This bird is probably common in most parts of Manchuria in suitable localities.

35. Motacilla citreola Pall. Yellow-headed Wagtail.

Tacz. p. 387; Dresser, p. 203; Hart. p. 296.

a–o. 7 ♂, 7 ♀. Khingan Mts., alt. 3400 ft. May 17–31, 1908.

p–t. 3 ♂, 2 ♀. Khingan Mts., alt. 3500 ft. June 1–18, 1908.

Iris dark brown; feet and bill black.

My skins measure, on the average, slightly more than those in the British Museum, but this is perhaps explained by the fresh condition of their plumage. The wings of most of the males exceed 3·5 in. in length. The Yellow-headed

Wagtail is evidently a common breeding-bird in the mountainous country of N. Manchuria.

36. MOTACILLA FLAVA BOREALIS. Blue-headed Wagtail.
Tacz. p. 382 ; Dresser, p. 205 ; Hart. p. 291.
a. Khingan Mts., alt. 3400 ft. May 22, 1908.
Iris very dark brown ; feet and bill black.

37. ANTHUS TRIVIALIS MACULATUS. Eastern Tree-Pipit.
Dresser, p. 212 ; Ingram, Ibis, 1908, p. 153.
Pipastes maculatus Tacz. p. 390.
a–d. ♂ ♂ ♂ ♂. Khingan Mts., alt. 3400–3600 ft. May 12–18, 1908.
e, f. ♂ ♂. Khingan Mts., 3600 ft. June 11, 1908.
g. ♂. Fan-chia Tun, Kirin Province. Sept. 1908.
Iris dark brown ; feet flesh-brown ; bill brownish.

38. ANTHUS RICHARDI Vieill. Richard's Pipit.
Tacz. p. 395 ; Dresser, p. 219.
a. ♂. Khingan Mts., alt. 3500 ft. May 20, 1908.
b. ♂. Chang-chun. July 6, 1908.
c. Fan-chia Tun, Kirin Province. Sept. 9, 1908.
Iris dark brown ; feet flesh- or pinky-brown ; upper mandible dark brown.

Bianchi received an example from Yingtzu, killed on Oct. 4, 1901.

39. ORIOLUS DIFFUSUS Sharpe. Black-naped Oriole.
Oriolus indicus Dresser, p. 228.
a. ♂. Chang-chun, Kirin Province. July 13, 1908.
b, c. ♀ ♀. Chu-chia Tai, Kirin Province. Aug. 9 and 17, 1908.
d. ♀. Fan-chia Tun, Kirin Province. Sept. 11, 1908.
e. ♂. Near Kirin. Sept. 1886. (*E. J.*)

40. LANIUS SPHENOCERCUS Cab. Long-tailed Grey Shrike.

Tacz. p. 485; Dresser, p. 230.

a. ♂. Plains near Tsi-tsi-ha, Manchuria. (*E. J.*)

This is a very rare Shrike. There is no date on the label, but Sir Evan James visited Tsi-tsi-ha on Sept. 20–23, 1886.

41. LANIUS CRISTATUS Linn. Red-tailed Shrike.

Tacz. p. 498; Dresser, p. 240; Ogilvie-Grant, Nov. Zool. 1902, p. 481; Hart. p. 446.

a–c. ♂ ♂ ♂. Khingan Mts., alt. 3500 ft. May 29–31, 1908.

d–g. ♂ ♂ ♂ ♀. Khingan Mts., 3200–3600 ft. June 9–22, 1908.

h. ♂ imm. Chu-chia Tai, Kirin Province. Aug. 24, 1908.

Iris dark brown; bill and feet black.

Some of the specimens of *L. cristatus* in the British Museum, and one or two of my Manchurian skins, have the grey on the forehead more pronounced than their fellows, and these might almost be said to intergrade with certain examples of *L. lucionensis*. With the abrasion of the plumage, *L. cristatus* certainly becomes greyer and more like *L. lucionensis*.

42. LANIUS LUCIONENSIS Linn. Philippine Red-tailed Shrike.

Tacz. p. 502; Dresser, p. 242; Ogilvie-Grant, Nov. Zool. 1902, p. 483; Hart. p. 447.

a. ♂. Chu-chia Tai, Kirin Province. July 30, 1908.

b. ♂. ,, ,, ,, ,, Aug. 24, 1908.

These two specimens are in very worn plumage, but I think that they may safely be referred to the present species.

43. MUSCICAPA SIBIRICA Gm. Siberian Flycatcher.

Dresser, p. 250; Hart. p. 478.

Hemichelidon sibirica Tacz. p. 475; Sharpe, Hand-l. iii. p. 204.

a, b. ♂ ♀ ?. Chu-chia Tai, Kirin Province. July 30, 1908.

c. ♀. Chu-chia Tai, Kirin Province. Aug. 9, 1908.

My specimens are typical, with the under parts very white and heavily streaked.

44. MUSCICAPA LATIROSTRIS Raffles. Brown Flycatcher.

Hart. p. 477.

Alseonax latirostris Tacz. p. 467; Dresser, p. 252; Ingram, Ibis, 1908, p. 140.

a, b, c. ♀ ♀ ♂. Khingan Mts., alt. 3700 ft. May 29 to June 5, 1908.

d. ♂. Fan-chia Tun, Kirin Province. July 29, 1908.

Iris brownish-black; feet blackish; bill brown-black above.

45. SIPHIA PARVA ALBICILLA. Eastern Red-breasted Flycatcher.

Erythrosterna p. albicilla Tacz. p. 469.

Muscicapa albicilla Dresser, p. 256.

Capt. Karpow procured a male near Yingtzu on Sept. 11, 1901, evidently on migration.

46. MUSCICAPA NARCISSINA XANTHOPYGIA. Corean Narcissus Flycatcher.

Hart. p. 475.

Xanthopygia tricolor Tacz. p. 480.

a. ♂. Khingan Mts., 3400 ft. June 6, 1908.

47. TERPSIPHONE INCII (Gould). Chinese Paradise-Flycatcher.

Dresser, p. 262.

Capt. Karpow procured two examples of this species near Yingtzu, May 10 and 11, 1901.

48. HIRUNDO RUSTICA Linn. Barn-Swallow.

Dresser, p. 264.

a. ♀. Chang-chun, Kirin Province. July 15, 1908.

Iris dark brown; feet blackish-brown; bill black.

According to my series of Swallows, all four races of

H. rustica occur in Manchuria, and so fine is the distinction between these forms, that I have had much difficulty in separating some of my examples. One is sufficiently dark on the under parts to be called *tytleri*; a second has the under surface almost white and the complete thoracic band of typical *rustica*; a third agrees perfectly with specimens from N. America, and is therefore *erythrogastra*; while, lastly, I have birds that must be referred to *gutturalis*. There are also intermediate examples in the collection.

This, I think, shews the inadvisability of dividing birds which range as widely as Swallows into a number of ill-defined subspecies; at the meeting-point of their various ranges it is quite impossible to separate the races with anything like certainty, and several of my specimens might excusably be referred to either one of three species or subspecies, viz., *erythrogastra*, *gutturalis*, and *rustica*. However, as I have used trinomials elsewhere in this paper, I have attempted to name my skins according to the subspecific differences described by certain ornithologists.

Dr. Sharpe has very kindly examined the specimen which I have called *H. rustica*, and he agrees with me in considering it typical.

Bianchi also named a Swallow, killed by Capt. Karpow at Yingtzu, Aug. 12, 1901, *H. rustica*; but it must be remembered that in Swallows the under surface usually becomes whiter as the summer advances.

49. HIRUNDO RUSTICA GUTTURALIS. Eastern Barn-Swallow.

Tacz. p. 173; Dresser, p. 265; Ingram, Ibis, 1908, p. 157.

a, b. ♂ ♀. Chang-chun, Kirin Province. July 6, 1908.
c, d. ♂ ♂. Chu-chia Tai, Kirin Province. Aug. 16, 1908.
e. ♀. Kirin Province. Sept. 17, 1908.

Iris dark brown; feet and bill black.

50. HIRUNDO RUSTICA ERYTHROGASTRA.

Dresser, p. 266.

a, b. ♂ ♀. Khingan Mts., alt. 3600 ft. May 29 and June 17, 1908.

c, d. ♂ ♂. Chan-chun, Kirin Province. July 6, 1908.
e. juv. ♀. " " " " "

This and *H. gutturalis* are seemingly the prevailing forms in N. Manchuria. If I recollect rightly, the rufous-breasted birds were those most commonly seen during my journey through the country in 1907.

51. HIRUNDO RUSTICA TYTLERI.

Dresser, p. 266.

a. Khingan Mts., alt. 3300 ft. June 15, 1908.

Iris dark brown; feet blackish; bill black.

This specimen has the under parts chestnut and consequently may be referred to the subspecies *tytleri*—a bird which breeds in North-east Asia up to Kamschatka.

52. HIRUNDO RUFILA DAURICA. Daurian Red-rumped Swallow.

Tacz. p. 182; Dresser, p. 268.

a–h. ♂ ♀ ♀ ♀ ♂ ♂ ♀ ♂. Chang-chun, Kirin Province. July 5–16, 1908.

i. ♀. Kirin Province. Sept. 17, 1908.

Iris brown; feet blackish; bill black.

In 1907 I found this Swallow plentiful along the Trans-Siberian Railway, right across North Manchuria. At almost every station a few pairs were nesting under the roofs of the platform shelters. It is more sociable than the Barn Swallow and will often assemble in small colonies like the House-Martin.

53. CHELIDON URBICA LAGOPODA. Oriental House-Martin.

Tacz. p. 184; Dresser, p. 270.

a. ♂. Khingan Mts., alt. 3500 ft. June 17, 1908.
b. ♂. " " alt. 3900 ft. June 23, 1908.

Iris very dark brown; bill black.

This bird is common as a breeding species in N. Manchuria. My collector has sent me three clutches of eggs; these are white and indistinguishable from those of the typical *C. urbica.*

54. Cotile riparia (Linn.). Common Sand-Martin.

Dresser, p. 271.

Bianchi records the Common Sand-Martin from South Manchuria and is careful to mention that his example, killed at Yingtzu, July 21, 1901, was not *C. sinensis*. That species doubtless also occurs in Manchuria, as it is said to range into the Ussuri Country, while it winters in the Philippines, S. China, Siam, and Burma.

55. Chloris sinica (Linn.). Chinese Greenfinch.

Dresser, p. 284; Hart. p. 64.

a. juv. ♀. Khingan Mts., alt. 3700 ft. May 29, 1908.

Iris dark brown; feet pale brown; bill brownish.

This specimen is in its first plumage, so it is difficult to determine whether or no it belongs to Hartert's subspecies *ussuriensis*.

56. Eophona melanura migratoria Hart. Migratory Grosbeak.

Hart. p. 59.

a, *b*. ♂ ♂. Chu-chia Tai, Kirin Province. Aug. 18 and 19, 1908.

This form seems to be very distinct from the typical Chinese bird, both in coloration and in size of bill, and is easily recognisable. It is surprising that it should have remained undescribed for so many years.

57. Passer montanus (Linn.). Tree-Sparrow.

Tacz. p. 617; Dresser, p. 293; Hart. p. 161.

a, *b*, *c*. ♀ ♀ ♀. Khingan Mts., alt. 3500 ft. May 5–27, 1908.

d. (Tung-hua Hsien.) June 6, 1886. (*E. J.*)

Iris brown; feet light brown; bill blackish.

Doubtless a common bird throughout Manchuria: it is certainly fairly plentiful along the Railway in North Manchuria.

58. Fringilla montifringilla Linn. Brambling.

Dresser, p. 311.

a. ♂. Khingan Mts., alt. 3600 ft. May 10, 1908.

Iris dark brown ; feet brown ; bill dark bluish.

This example is in full summer plumage, with a clean, steely-black head. On the evidence of a single specimen it would be imprudent to assert that this species breeds in the Khingans, but the lateness of the date seems to indicate that a few pairs remain to nest in the mountainous regions of North Manchuria. When visiting Japan in 1907 I thought I observed Bramblings in the Nikko Mountains in May, but I was not able to procure specimens. On the other hand, according to Mr. Owston (*in litt.*), the latest date upon which examples have been taken in that country is March 25th, when some were killed in the Hakone Mountains; but these males had the feathers of the head distinctly tipped with brown, and consequently were not in full nuptial dress.

Bianchi records a male from Yingtzu, March 20, 1901.

59. Linota linaria (Linn.). Mealy Redpoll.

Tacz. p. 639 ; Dresser, p. 315 ; Hart. p. 77.

a. ♂. Khingan Mts., alt. 3800 ft. May 3, 1908.

Iris brown ; feet brown ; bill brownish.

Capt. Karpow procured a specimen at Yingtzu, March 24, 1901 (*Bianchi*).

60. Carpodacus erythrinus (Pall.). Rose-Finch.

a, b. ♂ ♂. Khingan Mts., alt. 3400 ft. May 31 and June 11, 1908.

Iris dark brown ; feet dark horn-brown ; bill dark brown above, lighter below.

Being brightly-coloured and rather small, these Manchurian skins might perhaps be referred to the somewhat doubtful subspecies *C. erythrinus grebnitskii* Stejneger. Their wing-measurements are 3·2 in. and 3·35 in.

61. **Emberiza rutila** Pall. Chestnut Bunting.

Tacz. p. 607; Dresser, p. 348; Hart. p. 172.

a, b. ♂ ♂. Khingan Mts., alt. 3800 ft. June 1 and 5, 1908.

c. ♀? Chu-ehia Tai. Aug. 22, 1908.

Iris brown; feet horn-brown; bill brownish.

A specimen was also procured at Yingtzu, May 3, 1901, by Capt. Karpow.

62. **Emberiza aureola** Pall. Yellow-breasted Bunting.

Dresser, p. 349; Hart. p. 173.

Euspiza aureola Tacz. p. 603.

a–o. 12 ♂, 3 ♀. Khingan Mts., alt. 3400–3600 ft. May 23–31, 1908.

p–w. 5 ♂, 3 ♀. Khingan Mts., alt. 3400–3600 ft. June 1–22, 1908.

x. ♂. Fan-chia Tun, Kirin Province. Sept. 15, 1908.

Iris brown; feet brownish-horn-coloured; bill dark brown.

This bird is very common in North Manchuria; I saw it plentifully all along the Trans-Siberian Railway, the males being fond of sitting conspicuously upon the telegraph-wires, whence they would utter their short but melodious little song.

My collector took two clutches of eggs of this species in the Khingan Mountains.

63. **Emberiza spodocephala** Pall. Black-faced Bunting.

Tacz. p. 563; Dresser, p. 350; Hart. p. 176.

a, b. ♂ ♂. Khingan Mts., alt. 3500 ft. May 18, 1908.

c. ♀. Fan-chia Tun, Kirin Province. Sept. 18, 1908.

64. **Emberiza leucocephala** Gm. Pine-Bunting.

Tacz. p. 590; Dresser, p. 359; Hart. p. 169.

a–l. 8 ♂, 4 ♀. Khingan Mts., alt. 3800 ft. April 18–24, 1908.

m–v. 6 ♂, 1 ♀. Khingan Mts., alt. 3500 ft. May 4–5, 1908.

Iris brown; feet horn-coloured; bill dark brownish.

Judging from the large series, the Pine-Bunting must be abundant during the summer months in the mountains of N. Manchuria.

65. EMBERIZA FUCATA Pall. Grey-headed Bunting.

Tacz. p. 577; Dresser, p. 360; Hart. p. 186.

a. ♂. Khingan Mts., alt. 3400 ft. June 20, 1908.

b–d. ♂ ♀ and? Chang-chun, Kirin Province. July 5–14, 1908.

e. ♂. Tung-hua Hsien. June 9, 1886. (*E. J.*)

An immature male has been recorded from Yingtzu, Aug. 6, 1901 (*Bianchi*), so that this Bunting apparently inhabits the whole of Manchuria.

66. EMBERIZA RUSTICA Pall. Rustic Bunting.

Tacz. p. 572; Dresser, p. 362.

A specimen was shot at Yingtzu, May 2, 1901 (*Bianchi*).

67. EMBERIZA PUSILLA Pall. Little Bunting.

Tacz. p. 594; Dresser, p. 363; Hart. p. 188.

a, b. ♂ ♂. Khingan Mts., alt. 3900 ft. May 13 and 14, 1908.

c–g. ♂ ♂ ♀ ♀ ♀. Khingan Mts., alt. 3400–3500 ft. May 18–23, 1908.

Iris brown; feet horn-brown; bill blackish.

68. EMBERIZA CIOIDES CASTANEICEPS. Moore's Meadow-Bunting.

Dresser, p. 365; Hart. p. 186.

a. ♂? Hunchun. Nov. 6, 1886. (*E. J.*)

If the subspecies (*E. c. castaneiceps*) be held good, which several authors doubt, Sir Evan James's bird may be referable to it.

69. Emberiza pallasi (Cab.). Pallas's Bunting.

Hart. p. 194.

Schœnicla passerina Tacz. p. 600.

Emberiza passerina Dresser, p. 371.

a. ♂. Khingan Mts., alt. 3400 ft. May 23, 1908.

Iris brown ; feet leaden-brown ; bill blackish.

This bird, in full nuptial dress, was probably nesting in the Khingans. Its regular breeding-ground is East Siberia, but, according to Kalinowski (Tacz. p. 160), it also breeds sparingly in Corea. It evidently winters in the south of the country, as Capt. Karpow shot three specimens near Yingtzu (♂ ♀ Jan. 1, ♂ Sept. 11, 1901).

70. Calcarius lapponicus (Linn.). Lapland Bunting.

Tacz. p. 557 ; Dresser, p. 373 ; Hart. p. 200.

a. ♂. Khingan Mts., alt. 3500 ft. May 20, 1908.

Iris brown ; feet black ; bill greenish-yellow.

It is very remarkable to find the Lapland Bunting in Manchuria so late in the season and in full breeding-plumage. One wonders whether a few pairs can remain to nest in the Khingan Mountains. If such prove to be the case, it would be a considerable extension of the breeding-range so far as it is at present known.

71. Alauda arvensis cinerea Ehmcke. Ehmcke's Skylark.

Tacz. p. 411 ; Hart. p. 247.

a. ♂. Khingan Mts., 3800 ft. April 24, 1908.

b, *c*, *d*. ♂ ♂ ♂. Khingan Mts., 3400–3500 ft. May 20, 1908.

Iris dark hazel-brown ; feet brown ; bill dark brown above, lighter below.

In coloration these Skylarks belong to the light race known as *A. cantarella* Bp. from South-east Europe, but they are perhaps rather greyer, and the measurements are certainly small (the wings average 4·2 in.). I have therefore referred them to Ehmcke's subspecies, retained by Hartert in his 'Vögel der paläarktischen Fauna.' In the British

Museum there are specimens, collected by Seebohm at Krasnoyarsk, that agree perfectly with mine. Hartert gives the distribution of this race as follows:—"Must be a breeding bird in West Siberia, at least as far (east) as Krasnoyarsk, Turkestan; Persia to Palestine (?). In winter it is common on the north side of the Caucasus, and as far as Algeria, Tunis, and Egypt.

72. ALAUDA ARVENSIS PEKINENSIS.

Hart. p. 248.

Bianchi records this form of Skylark from Yingtzu (Jan. 24 and ♂ Oct. 10, 1901).

73. GALERIDA CRISTATA LEANTUNGENSIS. Liao-Tung Crested Lark.

Hart. p. 236.

Capt. Karpow shot a male Crested Lark at Yingtzu on Oct. 10, 1901, which Bianchi has named *leantungensis*.

74. SPODIOPSAR CINERACEUS (Temm.). Grey Starling.

Tacz. p. 544; Dresser, p. 402; Ingram, Ibis, 1908, p. 151.

a. ♂. Khingan Mts., alt. 3600 ft. April 25, 1908.

b, c. ♂ ♀ juv. Chang-chun, Kirin Prov. July 6, 1908.

d. ♂ juv. Chu-chia Tai, Kirin Prov. Aug. 17, 1908.

e, f. ♂ ♂. (Yung Ling.) June 2, 1886. (*E. J.*)

Adult: iris yellowish-brown; feet bright yellow; bill orange.

Immature: iris brown; feet and bill yellow.

Bianchi also records specimens from Yingtzu in the extreme south, so that this Starling is probably found throughout Manchuria.

75. NUCIFRAGA CARYOCATACTES MACRORHYNCHA Brehm. Large-billed Nutcracker.

Tacz. p. 540; Dresser, p. 409; Hart. p. 26.

a. ♀. Chang Pei-shan Mts. July 12, 1886.

b, c. ♂ ♀. Wha-pi-Hoa Forests, Chang Pei-shan Mts. July 18, 1886.

"Iris dark brown; feet and legs black" (*E. J.*).

76. Garrulus brandti Eversm. Brandt's Jay.

Tacz. p. 509; Dresser, p. 413; Hart. p. 33.

a, b. ♂ ♀. Khingan Mts., alt. 3700 ft. May 8, 1908.

c. ♀. Hei-li Ho Forests, Chang Pei-shan. July 7, 1886.

d. ♂. Ninguta. (Oct. 26.)

e. ♀. Near O-mo-so. (Nov. 18.)

f. ♀. Chang Tsai Ling. (Nov. 19.)

Iris greyish-blue; feet brown; bill black.

Going through a large series of this Jay, I find that it shews a strong tendency to become generally paler and larger towards the eastern side of its range. Compared with specimens from the neighbourhood of Krasnoyarsk, my birds have the heads light foxy-brown instead of dark chestnut, the difference being especially marked towards the base of the bill and on the nasal plumes, the latter being sandy white in my specimens. The wing-measurements of the Manchurian birds average about 6·9 in. (in the largest male 7·35 in.).

Examples from the mouth of the Amur and Hokkaido agree perfectly with mine.

Brandt's Jay is probably a resident species in Manchuria.

77. Cyanopica cyanus (Pallas). Eastern Blue Magpie.

Hart. p. 23.

Cyanopolius cyanus Tacz. p. 511; Dresser, p. 416.

a. ♀. (Lo-chuan K'ou Valley.) June 19, 1886.

b. ♂. Lao-sung Lung. (Oct. 30) 1886.

c. ♀. Hun-chun. (Nov.) 1886.

Iris brown; feet black (*E. J.*).

78. Pica bactriana Bp. Eastern Magpie.

Hart. p. 21.

Pica leucopterus Gould, B. of Asia, vol. v.; Dresser, p. 418.

a–d. ♀ ♀ ♀ ♂. Chan-chun, Kirin Province. July 5–13, 1908.

e, f. ♀ ♂. Chan-chun, Kirin Province. Aug. 1 and 13, 1908.

g–k. ♂ ♀ ♂ ♂ ♀. „ „ „ „ Sept. 2–29, 1908.

All my specimens appear to belong to the subspecies *bactriana.* Sir Evan James remarks:—"The commonest bird in Manchuria is the Magpie, the sacred bird, which goes in large flocks and is very tame. They were fond of teasing Rattler (Sir Evan's dog), settling down and hopping about just in front of him, and behind him, and all around him, croaking loudly and fluttering away just as the dog thought he had got one, and driving him perfectly wild."

79. PICA PICA SERICEA. Chinese Magpie.

I include this bird on the authority of M. Bianchi, who records a specimen from Yingtzu, killed Feb. 10, 1901.

80. COLŒUS DAURICUS Pall. Daurian Jackdaw.

Tacz. p. 521; Dresser, p. 419; Hart. p. 18.

a, b. ♂ ♀. Khingan Mts., alt. 3800 ft. April 24, 1908.

c–j. ♀ ♂ ♂ ♂ ♀ ♂ ♀ ♀. Khingan Mts., alt. 3400 ft. May 1–31, 1908.

k, l. ♂ ♂. Fan-chia Tun, Kirin Province. Sept. 11 and 12, 1908.

Iris blackish-brown; feet and bill black.

This Jackdaw is a common bird in Manchuria: I observed it frequently from the train when I crossed that country from Vladivostock to Europe.

81. COLŒUS NEGLECTUS (Schleg.). Oriental Jackdaw.

Tacz. p. 524; Dresser, p. 420; Hart. p. 18.

a, b. ♂ ♂. Khingan Mts., alt. 3500 ft. May 6 and 24, 1908.

c, d. ♀ ♂. „ „ alt. 3400 ft. June 1 and 2, 1908.

Iris black-brown; feet and bill black.

82. [Corvus torquatus Less. White-breasted Crow.

I include this bird on the authority of Sir Evan James, who states ('The Long White Mountain,' p. 270) that "White-breasted Crows were common." There is no reason why *C. torquatus* should not occur in Manchuria. I observed it plentifully round Shanghai in April 1907.]

83. Corvus corone orientalis. Eastern Carrion-Crow.

Tacz. p. 533; Dresser, p. 421 ; Hart. p. 12.

a. ♂. Khingan Mts., alt. 3400 ft. June 9, 1908.

Iris dark brown ; bill and feet black.

From Yingtzu, S. Manchuria, Bianchi records a specimen of *C. corone* (♂, Jan. 9, 1901). He possibly does not consider the eastern race worthy of subspecific rank, and most likely his bird is *C. corone orientalis*. Sir Evan James writes that Crows are common in S. Manchuria.

84. Corvus macrorhynchus japonensis. Japanese Jungle-Crow.

Tacz. p. 530 ; Dresser, p. 422 ; Ingram, Ibis, 1908, p. 149.

a. Near Hunchun. [Nov. 6, 1886.] (*E. J.*)

Compared with Japanese specimens, the bill is not so large in Sir Evan James's bird.

85. Corvus corax ussurianus. Ussurian Raven.

Tacz. p. 527 ; Dresser, p. 423 ; Hart. p. 4.

a. ♂. Khingan Mts., alt. 3800 ft. June 15, 1908.

Iris dark brown ; bill and feet black.

This example was moulting heavily when shot, so I am unable to give its wing-formula ; however, there seems little doubt that it belongs to this subspecies.

86. Corvus frugilegus pastinator. Eastern Rook.

Tacz. p. 537 ; Dresser, p. 427 ; Hart. p. 14.

a. ♂. Chang-chun, Kirin Province. July 13, 1908.

An immature bird. Bianchi received a skin from Yingtzu, killed March 6, 1901.

87. CYPSELUS PACIFICUS (Latham). Siberian Swift.

Tacz. p. 168 ; Dresser, p. 430 ; Ingram, Ibis, 1908, p. 161.

Although not represented in either collection, this bird is no doubt common in parts of N. Manchuria. I found it abundant at Vladivostock in June, and also observed it during my journey along the Trans-Siberian Railway.

88. CAPRIMULGUS JOTAKA T. & Schl. Indian Nightjar.

Tacz. p. 162 ; Dresser, p. 434 ; Ingram, Ibis, 1908, p. 162.

a. S. Manchuria.

This Nightjar was procured near Yingtzu, April 30, 1901 (*Bianchi*).

89. PICUS MARTIUS Linn. Great Black Woodpecker.

Tacz. p. 699 ; Dresser, p. 437.

a. ♀. Khingan Mts. April 29, 1908.

b, *c.* ♀ ♀. Khingan Mts., 3600 ft. and 3700 ft. May 19 and 30, 1908.

d. ♂ juv. Hua-pi Ho. July 16, 1886. (*E. J.*)

Iris pale yellow ; feet blackish.

Sir Evan James shot his immature bird on the Hua-pi Ho (or Khu-i-fa River), a tributary of the Sungari, about 40 miles south of Kirin.

90. DENDROCOPUS MAJOR. Greater Spotted Woodpecker.

Dresser, p. 438 ; Hartert, Nov. Zool. vii. p. 529.

a, *b.* ♀ ♀. Near Mendukei, Khingan Mts., 3800 ft. May 14, 1908.

c–h. ♂ ♂ ♂ ♂ ♀ ♀. Near Mendukei, Khingan Mts., 3500–3700 ft. May 19, 1908.

i. ♂. Near Mendukei, Khingan Mts., 3600 ft. May 30, 1908.

Iris mahogany or red-brown ; feet blackish ; bill bluish-black.

My Manchurian Greater Spotted Woodpeckers may perhaps be referred to the race known as *D. major cissa*, for they have the under parts almost pure white and are tolerably large birds, their wing-measurements varying from 5·4 in. to 5·65 in. I quite agree with Dr. Hartert when he states that this form is hardly distinguishable from the true *D. major* as represented in N. Europe. My birds are almost exactly similar to specimens from that country.

91. DENDROCOPUS MINOR. Lesser Spotted Woodpecker.

Tacz. p. 103 ; Dresser, p. 444.

a, *b*. ♂ ♀. Khingan Mts., alt. 3800 ft. April 18 and 23, 1908.

c. ♂. Khingan Mts., alt. 3900 ft. April 29, 1908.
d. ♂. „ „ alt. 3500 ft. April 30, 1908.
e. ♀. „ „ alt. 3700 ft. May 2, 1908.
f. ♀. „ „ alt. 3600 ft. May 30, 1908.
g. ♀. „ „ alt. 3700 ft. June 8, 1908.

Iris red-brown ; feet blackish ; bill bluish-black.

In my birds the under surface is almost pure white and, in some examples, the under parts are practically free from striations ; the measurements are also fairly large. Consequently these Manchurian skins may be referred to the subspecies *D. m. pipra*.

Hargitt gives the distribution of this race (Cat. B. xviii. p. 216) as "from the South Ural Range, across Siberia north of about 55° lat., and into Kamtschatka and Behring Island," but in a footnote he explains that, for want of specimens and absence of information on the subject, he cannot be precise as to the range. Having gone through the extensive series now in the British Museum, I find that the white-bellied race, in the extreme east, extends far south of this latitude. As proof of this, there are good examples from the Ussuri Country as well as mine from the Khingan Mountains. West of the Urals the bird ranges into Lapland. A dingy-bellied form reappears in the Japanese Islands that is very like the typical *D. minor*. The ranges of the two races undoubtedly overlap to a considerable extent, for Taczanowski describes skins from Dauria that appear to approximate closely to the true *D. minor*.

92. Dendrocopus leuconotus (Bechst.). White-backed Woodpecker.

Tacz. p. 701; Buturlin, Mitt. d. Kauk. Mus. Bd. iii. (Tiflis).

a, b. ♂ ♀. Khingan Mts., 3800 ft. May 29, 1908.
c. ♂. Khingan Mts., 3400 ft. June 16, 1908.
d. ♂. Shin hon? June 16, 1886.
e. juv. ♂. Pai-shan Range. July 7, 1886.
f. ♀. Chang-tsai Ling, 80 miles E. of Kirin. (Nov. 19, 1886.)
g. ♂. Sansing. (Oct. 13, 1886.)

Iris mahogany or red-brown; feet and bill bluish-black.

This Woodpecker is evidently found throughout the country, as Sir Evan James also met with it, and in a number of different localities. My Manchurian birds seem to be typical, both in measurement and coloration, but one of Sir Evan's appears to belong to the whiter race known as *D. l. cirris* Pall.

Buturlin (*t. c.* p. 60) has divided *D. leuconotus* into eight forms, but the differences mentioned by him in most cases appear to me to be very trifling. I have not yet examined specimens from China, but "a black cross-band behind the ears" does not seem to be a very distinctive character, as it is subject to some variation. In one or two of Sir E. James's specimens this band is well-developed.

About the same time as, or a little after, the appearance of Buturlin's paper, Austin Clark described what he thought were two new subspecies from Corea and the Ussuri Country (Proc. U.S. Nat. Mus. xxxii. p. 470). He called the latter *ussurianus*, a name, curiously enough, also used by Buturlin in describing one of his forms from the same country. But the two descriptions are very different. Buturlin (who examined about twelve specimens) says that the "chest and breast . . . . are roseate-brownish, or dirty isabelline, resembling those of *D. lilfordi.*" Clark (who only had one skin at his disposal) describes his *ussurianus* as having "the under parts pure white." This, I think, conclusively proves the unsoundness of dividing the White-backed Woodpecker into innumerable races, especially when there is but little material at hand to work upon. At the most, I consider ornithologists ought not to recognise more than two or three geographical races of this Woodpecker, and even then the variations are not very well-marked.

93. PICOIDES TRIDACTYLUS CRISSOLEUCUS. Northern Three-toed Woodpecker.

Tacz. p. 722; Dresser, p. 452; Rothschild, Nov. Zool. ix. p. 162.

a. ♂. Khingan Mts., alt. 3800 ft. April 24, 1908.

b, c. ♂ ♂. Khingan Mts., alt. 3700 ft. May 19 and 31, 1908.

Iris red-brown; feet black; bill bluish-black.

My specimens seem to belong to the subspecies *crissoleucus*, but one has the sides more or less distinctly streaked. The yellow patch on the top of the head is not very extensive.

94. HYPOPICUS POLIOPSIS (Swinh.). Brown-breasted Woodpecker.

Hargitt, Cat. B. xviii. p. 201; Bianchi, Ann. Mus. Zool. St. Petersb. 1902.

a. ♂. Chu-chia Tai, Kirin Province. Aug. 19, 1908.

b. sex? Fun-chia Tun, Kirin Province. Sept. 9, 1908.

c, d. ♀? ♀? Fun-chia Tun, Kirin Province. Sept. 11 and 16, 1908.

I cannot find any ground for Hargitt's statement (*op. cit.* p. 201) that in the adult male there is a "spot of red in the centre of the chest"; as a matter of fact there is hardly ever any trace of it even in the immature bird, as may sometimes be observed in the closely-allied Indian species *H. hyperythrus*. Nor do I consider the colour of the under mandible and nasal plumes reliable specific characters. The yellow in the under mandible is probably the outcome of age, although not entirely so. There is an adult male *H. poliopsis* in the Styan collection from Newchwang with a decidedly yellowish lower mandible and pure black nasal plumes, while there is a young *hyperythrus* in the British Museum from the N.W. Himalayas with the bill almost entirely black and the nasal plumes buff, tipped with black. I believe the only constant difference between these two closely-allied Woodpeckers is the colour of the under parts. This is bright rufous-chestnut in the Indian bird and brown to sooty-brown in the Chinese form. In the latter the black on the back is perhaps purer and more intense than in *H. hyperythrus*. This being the case, all the birds from the Styan collection (now in the British Museum) are *H. poliopsis*, and its range would therefore extend from Yun-nan and N.W. Sechuen across North China into South Manchuria. But all my skins are unusually dusky in shade, and perhaps the Manchurian bird may ultimately prove to be subspecifically distinct, in which event I would suggest the name *manchuricus*. Bianchi describes Captain Karpow's specimen from Yingtzu as having the under parts "blackish" (*tom. cit.*). The only thing that deters me from describing the Manchurian bird at once is the fact that immature examples are always darker and more dingy than the adults, but, on the other hand, young birds may be easily recognised by the lighter shade of the crimson crown and their dusky throat, neck, and breast, profusely mottled with large cream-coloured spots. In one of my specimens the under surface is blackish-brown and probably resembles that collected by Capt. Karpow. The bill seems to be variable: the culmen of an adult male measures 1·16 in.; that of one of the young birds a fraction under 1 in.

95. GECINUS CANUS (Gm.). Grey-headed Green Woodpecker.

Dresser, p. 456.

a, b. ♂ ♀. Shing-king. June 6, 1886.

c. Chang-tsai. (*E. J.*)

96. IYNX TORQUILLA (Linn.). Wryneck.

Tacz. p. 727; Dresser, p. 457.

a–i. Five ♂, four ♀. Khingan Mts. May 13 to June 14, 1908.

Iris brown; feet greenish-drab; bill greenish-horn-coloured.

97. ALCEDO ISPIDA Linn. Common Kingfisher.

Tacz. p. 194; Dresser, p. 458.

Sir Evan James procured a Common Kingfisher in South Manchuria.

98. HALCYON COROMANDUS (Lath.). Ruddy Kingfisher.

Dresser, p. 460.

a. ♀. Lo-chuan K'ou Valley. June 20, 1886.

Iris blackish; bill coral red (*E. J.*).

The lower half of Manchuria probably forms the northern limit of this bird's range on the continent. In Japan it rarely reaches Yezzo in the summer. The more tropical examples are rather darker and richer in coloration.

99. EURYSTOMUS CALONYX Sharpe. Oriental Broadbill.

E. orientalis, Tacz. 189; Dresser, p. 464.

a. ♂. Forests of Chang Pai-shan Mts. July 20, 1886.

Iris red; bill and feet coral-red (*E. J.*).

100. UPUPA EPOPS Linn. Hoopoe.

Dresser, p. 467.

a–d. Four ♂. Chang-chun, Kirin Province. July 6–14, 1908.

e–t. Eight ♂, eight ♀. Fan-chia Tun, Kirin Province. July 22–28, 1908.

Iris dark brown; feet blackish; bill black.

All the examples in my collection are from the central part of Manchuria, and as no birds were procured in the north, it seems that the Hoopoe only inhabits the southern half of the country.

101. CUCULUS CANORUS Linn. Common Cuckoo.

Tacz. p. 685; Dresser, p. 468.

a. ♀. Khingan Mts., alt. 3400 ft. May 31, 1908.

b–i. Six ♂, two ♀. Khingan Mts., alt. 3400–3900 ft. June 1–23, 1908.

j, k. ♂ ♀. Chang-chun, Kirin Province. July 6 and 16, 1908.

l. ♀. Chu-chia Tai, Kirin Province. Aug. 21, 1908.

m–o. ♂ ♂ ♀. Fan-chia Tun, Kirin Province. Sept. 2–17, 1908.

Iris yellowish-brown; feet yellow; bill blackish.

102. CUCULUS INTERMEDIUS Vahl. Himalayan Cuckoo.

C. saturatus Tacz. p. 689; Dresser, p. 470; Ingram, Ibis, 1908, p. 160.

a. ♀. Khingan Mts., alt. 3600 ft. May 29, 1908.

b. ♀. Chu-chia Tai, Kirin Province. Aug. 18, 1908.

Iris and feet yellowish; bill bluish-black.

103. NYCTALA TENGMALMI (Gm.). Tengmalm's Owl.

Tacz. p. 133; Dresser, p. 482.

a. ♂. Khingan Mts., alt 3700 ft. May 19, 1908.

Iris yellow; feet greyish; bill greenish.

This bird was probably killed on the south-eastern limits of its range; Dresser says that it is found in Siberia east to the Baikal.

104. ASIO ACCIPITRINUS (Pall.). Short-eared Owl.

Tacz. p. 157; p. 484.

a. ♂. Khingan Mts., alt. 3800 ft. April 20, 1908.

Iris yellow; feet greyish; bill bluish-black.

105. SCOPS GIU STICTONOTA. Chinese Scops Owl.

Scops japonica Tacz. p. 150; Dresser, p. 488.

a. ♂. Khingan Mts., alt. 3500 ft. May 25, 1908.

106. NINOX SCUTULATA JAPONICA. Japanese Hairy Owl.

Dresser, p. 495.

Sir Evan James procured three specimens of this Owl, but as the labels are missing I cannot give any data.

107. Circus melanoleucus (Forster). Pied Harrier.

Tacz. p. 120; Dresser, p. 508.

a–d. ♂ ♂ ♂ ♀. Khingan Mts., alt. 3400–3500 ft. May 21 and 27, 1908.

e, f. ♂ ♂. Khingan Mts., alt. 3400 ft. June 2 and 14, 1908.

g. ♂. Chu-chia Tai, Kirin Province. Aug. 1, 1908.

h–l. ♀ ♂ ? ♀ ♂. Fan-chia Tun, Kirin Province. Sept. 3 and 14, 1908.

Iris bright yellow; feet brownish yellow; bill black.

This Harrier is evidently a common summer visitor to Manchuria.

108. Buteo vulgaris plumipes. Eastern Buzzard.

Tacz. p. 64; Dresser, p. 509.

a–c. ♂ ♀ and ?. Khingan Mts., alt. 4000 ft. June 1 and 4.

Iris brown; legs dull yellow; bill black.

My collector has sent me an egg, with imperfect data, that has every appearance of being a Buzzard's, and I therefore attribute it to this species.

109. Astur palumbarius (Linn.). Goshawk.

Tacz. p. 98: Dresser, p. 529.

a. ♂ imm. N. Sansing. Oct. 13, 1886. (*E. J.*)

110. Accipiter nisus (Linn.). Sparrow-Hawk.

a–c. ♂ ♂ ♀. Khingan Mts., alt. 3500–3800 ft. May 15 and 27, 1908.

d. ♂ juv. Khingan Mts., alt. 3400 ft. May 23, 1908.

Iris orange-yellow; feet yellow; bill bluish-black.

111. Accipiter virgatus gularis. Japanese Sparrow-Hawk.

Tacz. p. 110; Dresser, p. 532.

a. ♂. Khingan Mts., alt. 3600 ft. May 20, 1908.

Iris orange; feet yallow; bill blackish.

112. Milvus melanotis T. & S. Black-eared Kite.

Tacz. p. 46; Dresser, p. 536; Ingram, Ibis, 1908, p. 163.

a. ♂. Khingan Mts., alt. 3500 ft. May 15, 1908.

Iris brown; feet greyish-drab; bill bluish-black.

113. Falco æsalon Tunstall. Merlin.

Tacz. p. 87; Dresser, p. 547.

a. Kirin Province. Sept. 17, 1908.

Capt. Karpow also procured a Merlin, a male, at Yingtzu, on Oct. 15, 1901.

114. Falco subbuteo Linn. Hobby.

Tacz. p. 84; Dresser, p. 548.

a. ♂. N. Kirin. (*E. J.*)

Sir Evan James was at Kirin in August and November, 1886; this bird was doubtless killed during his first visit, but no date is given on the label.

115. Erythropus amurensis (Radde). Radde's Red-legged Falcon.

Falco amurensis Dresser, p. 551.

a. ♂. Fan-chia Tun, Kirin Province. July 25, 1908.

b–e. ♂ ♂ ♀ ♀. Chu-chia Tai, Kirin Province. Aug. 9–21, 1908.

f, g. ♂ ♂. Fan-chia Tun, Kirin Province. Sept. 9 and 18, 1908.

116. Cerchneis tinnunculus (Linn.). Common Kestrel.

Tacz. p. 95; Dresser, p. 552.

a. ♀. Khingan Mts., alt. 3900 ft. April 22, 1908.

b. ♂. „ „ alt. 3600 ft. June 1, 1908.

Iris brown; feet yellow; bill bluish-horn-coloured.

117. Pandion haliaëtus (Linn.). Osprey.

Tacz. p. 52; Dresser, p. 554.

Sir Evan James's collections include an Osprey shot in South Manchuria.

118. **Phalacrocorax**, sp inc. Cormorant.

At the junction of the Sungchiang and the Sungari Rivers, Sir E. James observed an enormous colony of Herons and Cormorants nesting together in willow-trees ('The Long White Mountain,' p. 275). In a letter to me he describes these nests as being placed "on trees growing in deep mud and bulrushes and were unapproachable. Some of the trees were so smothered with the birds' droppings that they seemed to have been killed." These Cormorants were most likely *Ph. carbo*, but they may, of course, have been *Ph. filamentosus* (T. & S.).

119. **Ardea cinerea** Linn. Common Heron.

Tacz. p. 980; Dresser, p. 564.

a. ♂? Fan-chia Tun, Kirin Province. Sept. 10, 1908.

In 'The Long White Mountain' (p. 274) Sir Evan James writes as follows:—"Descending from the ridge, we passed through richly cultivated valleys till we reached the Sungchiang, one of the largest affluents of the Sungari. Near the junction was the finest heronry I ever saw. Thousands of Herons and Cormorants were nesting together in the willow-trees."

120. **Botaurus stellaris** (Linn.). Bittern.

Tacz. p. 991; Dresser, p. 578.

A male was shot at Yinko, April 7, 1901 (*Bianchi*).

121. **Anser segetum mentalis.** Thick-billed Bean-Goose.

Alphéraky, 'Geese of Eur. and Asia,' p. 130.

This is a somewhat doubtful subspecies, of which seemingly only three skins are known to ornithologists—one from Japan (now in the British Museum, and Oates's type), one from Bering Island, and lastly one from Yingtzu or Yinko, South Manchuria (not *North* Manchuria as stated by Alphéraky, p. 131, when referring to this bird). In his 'Geese of Europe and Asia,' Alphéraky writes: "I am rather inclined to see in these thick-billed Geese only very old individuals of the Siberian Bean-Goose which have reached the limit of their growth. I even think that perhaps all such thick-billed Geese will prove to be exceptionally old ganders of this species."

The Yingtzu specimen was procured by Capt. Karpow on February 27, 1901.

122. CYGNUS BEWICKI Yarrell. Bewick's Swan.

Tacz. p. 1118; Dresser, p. 600.

Bianchi records this Swan from Yingtzu, March 10, 1901.

123. TADORNA CORNUTA S. G. Gm. Common Sheldrake.

Tacz. p. 1124; Dresser, p. 601.

An immature bird was procured by Capt. Karpow in S. Manchuria, Oct. 5, 1901 (*Bianchi*).

124. ÆX GALERICULATA (Linn.). Mandarin Duck.

Tacz. p. 1127; Dresser, p. 603.

Bianchi records a male from Yingtzu killed March 31, 1901. Sir Evan James says (*in litt.*): "I shot some beautiful specimens of the Mandarin Duck, but did not think it worth while preserving them, as they are so well known and I thought I could get a specimen any time; but I only saw them at one place, near Shin-kin."

125. ANAS BOSCHAS Linn. Mallard.

From N. Manchuria my collector has sent home some eggs that possibly belong to this species, as they agree perfectly with examples in the British Museum collection. The bird is very common in the Ussuri Country and there is no reason to suppose that it is not equally so in Manchuria. Sir Evan James shot a number for food, but did not preserve any skins.

126. Eunetta falcata (Georgi). Falcated Teal.

Tacz. p. 1135 ; Dresser, p. 608.

a, b. ♂ ♂. Khingan Mts., alt. 3300 ft. June 6 and 14, 1908.

Iris black; feet plumbeous; bill black.

A male has also been procured at Yingtzu, March 2, 1901 (*Bianchi*).

127. Nettion crecca (Linn.). Common Teal.

Tacz. p. 1141 ; Dresser, p. 611.

a. ♂. South Manchuria. (*E. J.*)

Bianchi also records it from Yingtzu, March 9, 1901.

128. Nettion formosum (Georgi). Baikal Teal.

Dresser, p. 612.

Anas formosa Tacz. p. 1138.

Capt. Karpow procured two specimens in South Manchuria, February and March 1901 (*Bianchi*).

129. Dafila acuta (Linn.). Pintail.

Tacz. p. 1147 ; Dresser, p. 613.

A female was shot at Yingtzu, March 1, 1901 (*Bianchi*).

130. Fuligula affinis mariloides. Asiatic Scaup-Duck.

Fulix marila Tacz. p. 1164.

Æthyia marila Dresser, p. 618.

Bianchi records this Duck from the mouth of the Liao River, March 15, 1901.

131. Æthyia fuligula (Linn.). Tufted Duck.

Fulix cristata Tacz. p. 1167.

Æthyia fuligula Dresser, p. 619.

Capt. Karpow procured a specimen at Yingtzu, March 6, 1901.

132. NYROCA BAERI (Radde). Baer's Duck.

Fulix baeri Tacz. p. 1169.

Æthyia baeri Dresser, p. 621.

A male was procured at Yingtzu by Capt. Karpow on April 15, 1901 (*Bianchi*).

133. TURTUR ORIENTALIS (Lath.). Chinese Turtle-Dove.

Turtur rupicola Tacz. p. 733; Dresser, p. 648.

a. ♂. Fan-chia Tun, Kirin Province. Sept. 4, 1908.

b. ♂. Hang-lung Pass. June 23, 1886. (*E. J.*)

"Feet and iris dull red."

134. PHASIANUS TORQUATUS KARPOWI Buturlin. Corean Pheasant.

Buturlin, Ibis, 1904, p. 405.

Mr. Buturlin described this subspecies of *P. torquatus* from a specimen procured by Capt. Karpow on Jan. 20, 1901, near Te-lin. He gives its distribution, mostly on the authority of the last-named gentleman, as extending "through Corea (rarely south of Seoul), and through Southern Manchuria, north to Ghirin, west to the river Lao-khe, and south to Lao-yang. North of Ghirin, ... and in the most north-easterly parts of Corea, it meets with *P. alpherakyi*."

135. PHASIANUS TORQUATUS ALPHERAKYI Buturlin. Sungarian Pheasant.

Buturlin, Ibis, 1904, p. 399.

Mr. Buturlin says that great quantities of these birds have been sent to the markets of Moscow, St. Petersburg, and London from Harbin, and I suppose it is on this knowledge that he states that it inhabits the central and northern parts of Manchuria. He has a specimen from Lake Hanka in his collection. I have not examined examples of this or the foregoing species of Pheasant, so cannot express any opinion on the validity of their subspecific rank.

Near Sansing Sir Evan James found a locality in which Pheasants were remarkably abundant, the birds being found in low oak scrub close to cultivated ground. These were doubtless the Sungarian Pheasant. ('The Long White Mountain,' p. 328.)

136. [CROSSOPTILUM MANTCHURICUM Swinh. Manchurian Snow-Pheasant.

Elliot, Mon. Phas. vol. i.; Dresser, p. 672.

Although this bird is called *mantchuricum*, and, indeed, there is no reason why it should not come from Manchuria, I can find no positive proof of its ever having occurred in that country. Swinhoe, when he first described the bird (P. Z. S. 1862) said, "if I am rightly informed our specimen hails from Manchuria"; and I presume it was upon the strength of this same skin, doubtless brought to him by a native, that he informed Elliot (*tom. cit.*) that it was found in Manchuria. As specimens have since come from the Pe-chi-li Mountains, North China, there is every probability of its occurring also in Manchuria, but on our present knowledge it cannot be definitely included in the avifauna of that country. I can find no trace of Swinhoe's female specimen from which he originally described the species: it is not in the British Museum, which now contains most of his collection.]

137. PERDIX DAURICA (Pall.). Bearded Partridge.

Tacz. p. 776: Dresser, p. 683.

a. ♂. Pe-tu-na, Central Manchuria. (Sept.) 1886.

Sir Evan James writes ('The Long White Mountain,' p. 270) that "Partridges are not so common." Very large numbers are sent to the European markets every winter, but these may perhaps come from Dauria.

138. COTURNIX COMMUNIS (Linn.). Common Quail.

Tacz. p. 779; Dresser, p. 685.

Bianchi, Ann. Mus. Zool. St. Pétersb. 1902.

a. ♂. Khingan Mts., alt. 3400 ft. June 6, 1908.

b, c. ♂ ♂ (*C. communis* × *japonica*). Khingan Mts., alt. 3400 ft. June 11 and 15, 1908.

d. ♀. Chu-chia Tai, Kirin Province. Aug. 20, 1908.

Iris dark brown; feet flesh-brown; bill brownish.

Of a series of Quails, only two are the pure-bred *communis*, two are obviously hybrids (with brick-red throats and black anchor-marks), while the other two are typical *C. japonica.*

Bianchi mentions *C. communis* from Yingtzu in the south, so that the bird must inhabit the whole of Manchuria.

139. COTURNIX JAPONICA T. & S. Japanese Quail.

Tacz. p. 780; Dresser, p. 686; Ingram, Ibis, 1908, p. 168.

a, *b*. ♂ ♂. Khingan Mts., alt. 3400 ft. June 15 and 20, 1908.

Iris dark brown; feet fleshy brown; bill blackish-brown.

140. LYRURUS TETRIX (Linn.). Black Grouse.

Tacz. p. 766; Dresser, p. 698.

a, *b*. ♂ ♂. Khingan Mts., alt. 3800 ft. April 19 and 22, 1908.

c, *d*. ♂ ♀. „ „ alt. 3700–3900 ft. May 19, 1908.

e. ♂. „ „ alt. 3700 ft. June 6, 1908.

♂ ♀. South Manchuria. 1886.

Iris very dark brown; feet blackish; bill black.

Blackgame must be abundant in parts of Manchuria. I quote from Sir Evan James ('The Long White Mountain,' p. 343):—"On Nov. 2 we arrived at Ssŭ chan. . . . It was situated on the banks of a rivulet, on the other side of which was a grove of willow-trees about a mile in length. What was our joy to see these trees full of Black Grouse! We instantly crossed by a narrow, rickety bridge, ... and found them crowded fearlessly on the boughs. So we opened fire on them. The noise at first was only sufficient to make them fly a few yards to the next tree and wait to be shot at again, but eventually they began to get scared." Again he describes them as "sitting upon trees as tame as barndoor fowls."

141. TETRASTES BONASIA (Linn.). Hazel-hen.

a, b, c. ♂ ♂ ♂. Khingan Mts., alt. 3500–3800 ft. April 21–29, 1908.

d, e. ♂ ♂. „ „ alt. 3500 ft. and 3900 ft. May 6, 1908.

f. ♀. Ssŭ-tao, Chiang Forest. June 17, 1886.

g. Juv. „ „ „ „ „ „

h. ♂. Hang Lung Pass. June 22, 1886.

Iris dark brown; feet very dark plumbeous-brown; bill black.

The five males from the Khingans are exceptionally grey above, while there is much white on the under parts; on the other hand, in Sir Evan James's specimens rufous and brown are the prevailing colours. One of his birds, killed June 22nd, is only half-grown.

142. TURNIX BLANFORDI Blyth. Blanford's Hemipode.

Bianchi, Ann. Mus. Zool. St. Pétersb. 1902.

a. ♂. Piu-chien San, Kirin Province. July 27, 1908.

b. ♂. June 18, 1886.

Iris white; feet yellow.

Both these Manchurian specimens are very pale and grey above, without a vestige of rufous on the nape or back. They are probably quite old birds, as all the males in the British Museum are more or less mottled with red-brown on the nape; but, of course, the males are never so conspicuously marked as the adult females. The rufous is apparent in males killed as late as May and June, that is to say, in birds that must have been at least ten or eleven months old when shot. It seems to me probable that the rufous is not entirely lost until the second or third season.

Bianchi records this species from Port Arthur (Sept. 20, 1901).

Forty miles south of Sansing, Sir Evan James speaks of a "Grey Quail" being plentiful in places. He probably refers to the present species.

143. Porzana pusilla (Pall.). Pallas's Rail.

Tacz. p. 997; Dresser, p. 708.

a. ♂. Khingan Mts., alt. 3300 ft. June 6, 1908.

Iris deep reddish-orange; feet greenish-drab; bill greenish.

This bird has also been procured at Yingtzu, a young male having been shot by Capt. Karpow on Sept. 10, 1901 (*Bianchi*).

144. Fulica atra Linn. Common Coot.

I include the Coot on the authority of Bianchi, who records a specimen from South Manchuria, March 10, 1901.

145. Grus communis Bechst. Common Crane.

Tacz. p. 796; Dresser, p. 718.

This and the next species were observed commonly near Tsitsihar by Sir Evan James when he visited that town in September 1886 ('The Long White Mountain,' p. 299).

146. Grus virgo (Linn.). Demoiselle Crane.

Tacz. p. 810; Dresser, p. 721.

Sir Evan James ('The Long White Mountain, p. 299) writes as follows:—"The road to Tsitsihar runs generally parallel to the left bank of the Nonni, but floods had converted all the intervening country into a succession of lakes, on the banks of which were great flocks of the Common and Demoiselle Cranes."

147. Grus japonensis Müll. Manchurian Crane.

Tacz. p. 806; Dresser, p. 719.

Sir Evan James found this Crane "pretty numerous" in the vast swamps beyond Petuna ('The Long White Mountain,' p. 296).

148. Otis tarda dybowskii. Siberian Bustard.

Tacz. p. 790; Dresser, p. 724.

Near Tsitsihar, on "vast undulating plains, stretching before us as far as the eye could reach, and covered with succulent grass," Sir Evan James met with "prodigious numbers of this fine Bustard" ('The Long White Mountain,' p. 298). He brought home a specimen, which is now in the British Museum.

149. CHARADRIUS DOMINICUS Müll. Eastern Golden Plover.

Tacz. p. 815; Dresser, p. 732.

a–d. ♀ ♀ ♀ ♀. Chu-chia Tai, Kirin Province. Aug. 22–27, 1908.

My birds from Chu-chia Tai were all changing into winter dress, black and white being equally proportioned and intermixed on the under surface. Capt. Karpow procured this Plover at Yingtzu, Sept. 10, 1901 (*Bianchi*).

150. ÆGIALITIS MONGOLA (Pall.). Mongolian Ringed Plover.

Tacz. p. 822; Dresser, p. 734.

a. ♂. Chu-chia Tai, Kirin Province. Aug. 22, 1908.

When shot this individual was still in breeding-plumage, with rusty-red under parts.

151. ÆGIALITIS PLACIDA (Gray). Hodgson's Ringed Plover.

Ingram, Ibis, 1908, p. 164.

a. ♀. (Ssŭ-taa Ching.) June 17, 1886. (*E. J.*)

Iris brown; feet yellow.

Hodgson's Ringed Plover was procured by Sir Evan James about a hundred and fifty miles from the coast; this fact is interesting, as it agrees with my observations of the bird in Japan (*l. c.*), where it appeared to be almost exclusively an inland breeding species.

152. VANELLUS CRISTATUS Wolf & Meyer. Lapwing.

Tacz. p. 838; Dresser, p. 749.

a–c. ♂ ♀ ♀. Khingan Mts., alt. 3400 ft. May 23–June 14, 1908.

Iris brown; feet reddish-brown; bill black.

153. HÆMATOPUS OSTRALEGUS OSCULANS. Eastern Oystercatcher.

Tacz. p. 843; Dresser, p. 751.

A specimen is recorded from Yingtzu, May 8, 1908 (*Bianchi*).

154. SCOLOPAX RUSTICULA (Linn.). Woodcock.

Tacz. p. 949; Dresser, p. 756.

Sir Evan James observed a few Woodcocks between Sansing and Ninguta, but did not preserve any skins.

155. GALLINAGO CŒLESTIS (Frenzel). Common Snipe.

Tacz. p. 960; Dresser, p. 759.

a, b. ♂ ♂. Khingan Mts., alt. 3400 ft. May 21, 1908.

c. ♀. Chu-chia Tai, Kirin Province. Aug. 27, 1908.

d–h. ♀ ♀ ♀ ♂. Fan-chia Tun. Sept. 3–17, 1908.

156. GALLINAGO STENURA (Kuhl). Pin-tailed Snipe.

Tacz. p. 959; Dresser, p. 761.

a, b. ♂ ♀. Khingan Mts. May 23, 1908.

c, d. ♂ ♂. Chu-chia Tai, Kirin Province. Aug. 18, 1908.

e–g. ♂ ♂ ♀. Chu-chia Tai, Kirin Province. Aug. 20, 1908.

h–j. ♀ ♀ ♂. Chu-chia Tai, Kirin Province. Aug. 23–27, 1908.

Iris brown; feet greenish; bill drab, darker towards tip.

The occurrence of this Snipe in the Khingans on May 23 is interesting, as it points to its nesting in Manchuria. Seebohm (Geogr. Distr. of Charadr. p. 478) says, "It is doubtful if it breeds as far south as the valley of the Amur"; but since then Prjzevalski found it nesting in large numbers on the Hoang Ho (Yellow River), in S. Mongolia.

157. TRINGA MINUTA Leisl. Little Stint.

Tacz. p. 918; Dresser, p. 770.

a. ♂. Chu-chia Tai, Kirin Province. Aug. 27, 1908.

b. ♀. Fan-chia Tun, Kirin Province. Sept. 9, 1908.

158. Totanus ochropus (Linn.). Green Sandpiper.

Tacz. p. 872; Dresser, p. 789.

a. ♀. Chu-chia Tai, Kirin Province. Aug. 19, 1908.

b, c. ♂ ♀. Fan-chia Tun, Kirin Province. Sept. 14 and 15, 1908.

159. Totanus glareola (Linn.). Wood-Sandpiper.

Tacz. p. 874; Dresser, p. 790.

a. ♂. Khingan Mts., alt. 3400 ft. May 23, 1908.

b. ♂. Chu-chia Tai, Kirin Province. Aug. 20, 1908.

c. ♂. Fan-chia Tai, Kirin Province. Sept. 14, 1908.

Evidently passes through Manchuria on both migrations.

160. Tringoides hypoleucus (Linn.). Common Sandpiper.

Tacz. p. 882; *Totanus hypoleucus* Dresser, p. 791.

a, b. ♀ ♀. Chang-chun, Kirin Province. July 14 and 16, 1908.

c. ♀. Chu-chia Tai, Kirin Province. Aug. 22, 1908.

d. ♂. Fan-chia Tun, Kirin Province. Sept. 2, 1908.

e. (Tung-hua Hsien.) June 6, 1886. (*E. J.*)

The Common Sandpiper doubtless breeds in most of the mountain-ranges; Sir Evan James met with it in South Manchuria.

161. Numenius arcuatus lineatus. Oriental Curlew.

Tacz. p. 938; Dresser, p. 803.

a. ♂. Khingan Mts., alt. 330 ft. June 2, 1908.

Iris brown; legs greyish; bill brown.

Having the lower back and axillaries pure white, this specimen may be referred to the Eastern form. The two races, however, intergrade, and Dr. Sharpe, in his 'Hand-list,' does not keep up the subspecies.

162. Numenius cyanopus Vieill. Australian Curlew.

Tacz. p. 940; Dresser, p. 804.

Bianchi records this bird from Yingtzu, April 9, 1901.

163. Larus canus Linn. Common Gull.

Tacz. p. 1033; Dresser, p. 829.

This is another species that I include upon the authority of Bianchi; a specimen was obtained at Yingtzu, March 31, 1901.

164. Larus vegæ Palmén. Eastern Herring-Gull.

Tacz. p. 1028; Dresser, p. 834.

a. ♂ juv. Steppes, near Tsi-tsi-ha. [Sept. 1886.]

165. Podicipes cristatus (Linn.). Great Crested Grebe.

Tacz. p. 1251; Dresser, p. 877.

Capt. Karpow procured a specimen at Yingtzu on April 4, 1901 (*Bianchi*).

XXIII.—*On the Tail-feathers of the Dabchick.*

By W. P. Pycraft, F.Z.S., M.B.O.U.

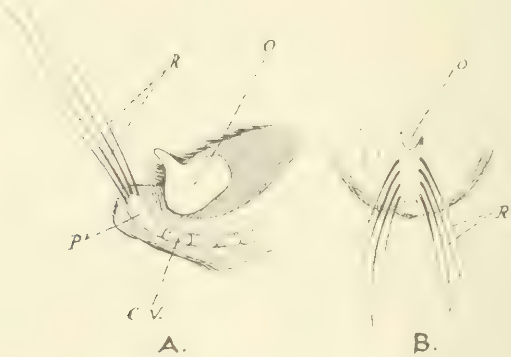
(Text-figure 10.)

The following short account of the number and arrangement of the tail-feathers of the Dabchick (*Podicipes fluviatilis*) is the result of a more minute examination of the disposition of these feathers, undertaken at the request of Dr. Sclater, and as a supplement to my paper on this subject published in the volume of 'The Ibis' for 1907 (p. 472).

In that paper these feathers were described as "semi-plumous in character . . . . . and not, apparently, exceeding eight in number." I also pointed out that they are arranged, not in a continuous series, or, after the fashion of normal tail-feathers, in a close series, but, on the contrary, are set in the form of a horseshoe, of which the free ends are directed upwards, and so lie alternately in relation one to another.

This description is practically confirmed in detail by my later work; though I still find it difficult to decide as to whether some of the apparent coverts are not in reality degenerate rectrices; but on the whole it does not appear that more than eight can be regarded as answering to rectrices. These, with their coverts, are arranged in a double series, one on either side of the middle line and running parallel with one another, leaving a well-marked apterion between them. The slight concavity which these two rows enclosed in the specimen originally examined—which caused me to describe them as arranged in the form of a horseshoe—was, I find, an individual peculiarity. As a matter of fact, the two rows—eliminating the coverts—run parallel one to the other, and, be it noted, have their ventral aspects turned towards each other, as in many Gallinaceous birds.

Text-fig. 10.



Tail-feathers of *Podicipes fluviatilis.*

A. Section through the tail, exposing the caudal vertebræ, to shew the relation of the rectrices to the pygostyle.

B. Superficial appearance of the bases of the rectrices.

C.V. = Caudal vertebræ.
P. = Pygostyle.
O. = Oil-gland.
R. = Rectrices.

This peculiar arrangement would seem to have come about as a consequence of the degeneration of the caudal vertebræ, and the shortening of this region of the vertebral column attendant thereon: the rectrices having been thus slowly drawn backwards and inwards towards the middle line till they are now divided only by a narrow space. Finally, in this degenerate tail all the rectrices are attached at their bases to the pygostyle, whereas in the normally developed rectrices the outermost, at any rate, are divorced therefrom.

The somewhat thicker shaft is practically the only distinguishing character between these rectrices and their coverts.

XXIV.—*Contributions to the Ornithology of Egypt.*—No. II. *Birds of the Province of Giza.* Part 2*. By MICHAEL J. NICOLL, F.Z.S., M.B.O.U.

69. ORIOLUS GALBULA.

Oriolus galbula Shelley, p. 156.

The Golden Oriole is a regular visitor during the spring and autumn migrations. I have frequently heard it singing in the spring. In the autumn nearly all those I have met with have been immature birds. The few adult males seen during the autumn are amongst the first arrivals.

During the spring migration of 1909 great numbers of Golden Orioles frequented the mulberry-trees in the Giza Zoological Gardens.

70. LANIUS EXCUBITOR ELEGANS.

Lanius lathora Shelley, p. 115.

Lanius excubitor elegans Swains.; Hartert, Vög. d. pal. Fauna, iv. p. 427.

This form of the Great Grey Shrike is a resident in Egypt and breeds in suitable localities in the Province.

In has not previously been recorded as a breeding species in Egypt. I have not yet met with the typical *L. excubitor* in that country.

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* Continued from above, p. 302. The figure of *Scotocerca inquieta* in the first part of this paper (Plate IV.) is accurate as regards its attitude, but is too dark on the upper parts. Unfortunately it was not possible to submit the coloured proof to the author for approval.—M. J. N.

71. Lanius minor.

Lanius minor Shelley, p. 115.

I possess an adult male of this species shot by Capt. Seppings on 5th Sept., 1907, near Giza. This is the only record I have of the occurrence of the Lesser Grey Shrike in the Province of Giza, though it is probably a regular visitor on migration, seeing that it winters in South Africa.

72. Lanius collurio.

Lanius collurio Shelley, p. 117.

The Red-backed Shrike is a regular visitor during the autumn migration in August and September. The adults appear to arrive before the young. Of the old males obtained by myself in the middle of August, one is in nearly full winter plumage, while two others have only begun their moult. An old female shot 25th August, 1907, is assuming a plumage approaching that of the male.

Up to the present time I have not met with this species in spring in Egypt.

73. Lanius pomeranus niloticus.

Lanius senator niloticus Hartert, Vög. d. pal. Fauna, i. p. 436.

Lanius auriculatus Shelley, p. 117.

A Woodchat-Shrike caught at Abu Roash in the Province of Giza, April 6th, 1905, lived for four months in the Giza Zoological Gardens. Mr. E. W. Buckley informs me that he has frequently seen Woodchats near Ayat in this Province.

During the spring and early summer of 1905 many examples of this Shrike were brought to me by a Bedouin who had caught them near Abu Roash, in the Province. This form differs from the typical Woodchat in having the bases of *all* the rectrices white.

74. Lanius nubicus.

Lanius nubicus Shelley, p. 116.

The Masked Shrike is a common visitor during the spring migration, but less numerous during the passage south in autumn.

75. Muscicapa grisola.

Muscicapa grisola Shelley, p. 118.

The Spotted Flycatcher is a regular visitor during both the spring and autumn migrations.

76. Muscicapa atricapilla atricapilla.

Muscicapa atricapilla Shelley, p. 119.

The Pied Flycatcher passes through in some numbers during the spring migration, but is much less common in autumn, and at the latter season I have only met with young birds.

77. Muscicapa atricapilla semitorquata.

Muscicapa atricapilla semitorquata Hom.; Hartert, iv. p. 483.

The only "record" of this Flycatcher from Egypt seems to be that of an adult male shot by myself in the Giza Zoological Gardens in April 1909. It frequented the Gardens for seven days, and when shot was very fat, a sure sign that it was about to continue its migration.

78. Muscicapa collaris.

Muscicapa collaris Shelley, p. 120.

The Collared Flycatcher is a regular visitor during the spring migration, but up to the present time I have not met with it in autumn.

79. Muscicapa parva.

On November 11th, 1906, I obtained a female example of the Red-breasted Flycatcher in the Giza Zoological Gardens (*cf.* Bull. B. O. C. vol. xix. p. 31). This appears to be the only record of this species for Egypt.

80. Hirundo rustica rustica.

Hirundo rustica Shelley, p. 120.

The European Chimney-Swallow is a regular visitor during the spring and autumn migrations.

81. Hirundo rustica savignii.

Hirundo riocourii Shelley, p. 121.

The Egyptian Chimney-Swallow is a resident in the Province of Giza. In this species the female is paler below than the male.

82. CHELIDON URBICA.

Chelidon urbica Shelley, p. 125.

The House-Martin seems to be a regular spring and autumn visitor in small numbers.

83. COTILE RIPARIA SHELLEYI.

Cotile shelleyi Sharpe, Cat. Birds B. M. x. p. 100 (1885).

Shelley's Sand-Martin arrives in spring and breeds in the Province. In the autumn it collects in huge parties, old and young together. Adults obtained in September are in full moult.

84. COTILE RIPARIA RIPARIA.

The Common Sand-Martin passes through the Province during the spring migration. I have not yet met with it, for certain, in autumn.

85. COTILE RUPESTRIS OBSOLETA.

Cotyle obsoleta Shelley, p. 123.

This Pale Crag-Martin is a resident in the desert parts of the Province, though it is not very common during the winter.

86. CARDUELIS ELEGANS.

Carduelis elegans Shelley, p. 152.

The Goldfinch appears to be resident in the Province, but in small numbers. A pair, at least, nested in a wild state in the Zoological Gardens during the summer of 1907. I saw the old birds feeding their young on the branch of a plane-tree. During the autumn old and young birds may be met with in small parties. I have as yet no specimens, so cannot say to which form the Egyptian Goldfinch should be referred.

87. CHRYSOMITRIS SPINUS.

The Siskin has not previously been recorded from Egypt. On February 11th, 1907, a pair were seen in the Zoological Gardens, and from that time onward till the end of the following month numbers frequented the Gardens, where they were daily to be seen in small flocks feeding on the buds of the apricot-trees.

It would seem that an invasion of this species took place in Egypt at that time, for Mr. G. E. Burnett Stuart informs me that such quantities of Siskins visited Lower Egypt that in the neighbourhood of Mariout nearly the whole of the barley-crop was destroyed, while still green, by these birds.

On October 26th of the same year I caught a female Siskin in my garden, whither it had been attracted by a caged male. Since that time I have not heard of the occurrence of this species in Egypt.

88. SERINUS HORTULANUS.

Serinus hortulanus Shelley, p. 154.

A pair of Serins frequented the Zoological Gardens during February 1908, and again in the same month of 1909. I have no other records of this species from the Province.

89. LINOTA CANNABINA MEDITERRANEA.

Linota cannabina Shelley, p. 154.

Acanthis cannabina mediterranea Tschusi; Hartert, Vög. d. pal. Fauna, i. p. 75.

After a careful examination of a series of Linnets collected by Mr. Bonhote and myself at Giza, we have come to the conclusion that they all belong to this form. These examples are smaller, paler, and paler red (males) on the breast than the North-European form. This Linnet is a regular visitor to the Province during the winter months. It collects in flocks and is extremely shy.

90. COCCOTHRAUSTES VULGARIS.

Coccothraustes vulgaris Shelley, p. 150.

A Hawfinch was caught alive in the Zoological Gardens on December 16th, 1904.

I have not personally met with this species in Egypt, but have heard of other occurrences outside the Giza Province.

91. SPORÆGINTHUS AMANDAVA.

Sporæginthus amandava Sharpe, Cat. Birds, xiii. p. 320.

A form of Amadavade Finch occurs regularly in August in the Zoological Gardens at Giza, in many of the gardens of Cairo, and possibly in other parts of Lower Egypt. As soon as they arrive, which they do in large numbers, these birds start nesting, and directly the young can fly *all take their departure,* and are not met with again till the following

August. At the Delta barrage these birds arrive somewhat earlier, as I am informed by Mr. W. Draper, the Superintendent of the Gardens there, than they do at Giza. It is remarkable that this species should occur in Egypt, and where they come from and where they go after nesting is at present unknown.

Shelley, in his 'Birds of Egypt,' p. 152, mentions an *Estrelda melanorhyncha* as occurring near Alexandria, and as he did not meet with it he copies a description given by Von Heuglin. If this should prove to be the same as my birds, Von Heuglin's description must be that of a young bird, a female, or a "male out of plumage."

I am unable at present to find any differences between Giza birds and Indian examples.

92. Passer domesticus indicus.

Passer domesticus Shelley, p. 148.

Passer domestica subsp.? Hartert, Vög. d. pal. Fauna, ii. p. 151.

Passer domesticus indicus Nicoll, Ibis, July 1908, p. 497.

For the present I place the Sparrow of the Delta under the above name, as it is almost indistinguisable from the Indian bird. The ear-coverts of *P. d. indicus* are certainly whiter than those of the Delta Sparrow, and I fancy that the red of the upper parts is deeper in the Indian examples.

This Sparrow is abundant in the cultivated parts of the Province and ranges over the whole Delta. How far south it extends I do not at present know.

93. Fringilla cœlebs.

Fringilla cœlebs Shelley, p. 15.

The Chaffinch is a regular winter visitor in small numbers; in some years it appears to be more abundant than in others.

94. Passer hispaniolensis.

Passer salicicola Shelley, p. 149.

During April 1909 numbers of Spanish Sparrows were seen in the Zoological Gardens. Although it abounds in the Delta during the winter, I have no other records of the species from the Province of Giza.

95. ERYTHROSPIZA GITHAGINEA.

Erythrospiza githaginea Shelley, p. 155.

The only records I have of the Trumpeter Bullfinch from the Giza Province are two examples seen by myself near Helwan on February 21st, 1908, five seen by myself at Abu Roash, February 1909, and an adult male which I shot in the Wadi Hof on May 7th, 1909.

96. EMBERIZA MILIARIA.

Emberiza miliaria Shelley, p. 144.

The Corn-Bunting is a regular winter visitor to the Province. Although it is usually met with in pairs or singly, it sometimes collects in large flocks, for on February 4th, 1909, I saw a party of several hundred individuals near the Giza Pyramids, where they were feeding in a patch of Lupins.

97. EMBERIZA CÆSIA.

Emberiza cæsia Shelley, p. 146.

Cretzschmar's Bunting appears to be a regular visitor during the autumn migration. The first arrivals, which consist of adults, appear in September, and are soon joined by younger birds. I have frequently seen flocks of a dozen or more individuals in the Zoological Gardens. After a short stay they gradually depart. Capt. Shelley calls this bird a spring visitor to Egypt, and mentions shooting an example near Cairo in April. He further states that it breeds occasionally in the Delta and near Cairo. Personally I have never met with this species in spring, nor have I, during two and a half years' residence in Giza, any records of its occurring at that time of year in the Province of Giza, though I have seen it in the Fayoum in March.

98. EMBERIZA HORTULANA.

Emberiza hortulana Shelley, p. 145.

I have but two records of the Ortolan from Giza—an adult shot by Mr. J. L. Bonhote, April 3rd, 1909, at Abu Roash, and one seen by myself in the Zoological Gardens during April 1909. It is possible, however, that this species is a regular spring migrant in the Province.

99. ALÆMON ALAUDIPES (Desf.).

Certhilauda desertorum Shelley, p. 135.

Alæmon alaudipes alaudipes (Desf.); Hartert, Vög. d. pal. Fauna, iii. p. 250.

The Bifasciated Lark is met with singly, in pairs, or in small flocks on the edge of the desert in the Province. I have specimens of two distinct phases collected by Mr. Bonhote and myself, one rufous-sandy above with small markings on the breast, the other greyish above with large blotches of black: in some specimens these blotches coalesce and form patches.

Up to the present time I have no breeding examples from Egypt.

100. GALERIDA CRISTATA NIGRICANS.

Galerita nigricans Brehm, Vogelfang und Naumannia, 1858, p. 206.

Galerida cristata nigricans Brehm; Hartert, Vög. d. pal. Fauna, ii. p. 227.

This dark form of the Crested Lark ranges in the Delta from Damietta to Cairo. It is common near Giza and nests in the Birseem fields. I have a series of specimens obtained at different times of the year, and in all of these the markings on the breast are very black and broad.

101. GALERIDA CRISTATA (?).

Amongst my series of Giza Crested Larks I have a specimen which I shot during the winter, entirely different from *G. c. nigricans*—paler and less thickly spotted on the breast. This bird exactly matches one shot by myself at Damietta in January, and three collected near Port Said by Commander H. Lynes, now in Mr. H. F. Witherby's collection. As I do not at present know the breeding-place of this form I consider it inadvisable to give it a name. It is possible that it breeds near Lake Menzaleh, but, on the other hand, it may be an immigrant from somewhere in Southern Europe. I hope to be able to find out more about its breeding-place shortly.

I have not yet met with *G. c. altirostris*.

102. Alauda arvensis cinerea.

Alauda arvensis cristata Ehmcke; Hartert, Vög. d. pal. Fauna, iii. p. 247.

This Grey Skylark is a most abundant winter visitor to Egypt. I have a series of specimens collected near Giza, and have examined several more collected by Mr. J. L. Bonhote.

103. Alauda arvensis cantarella.

Alauda arvensis cantarella Bonaparte; Hartert, Vög. d. pal. Fauna, iii. p. 246.

Amongst the swarms of Skylarks which visit Egypt during the winter months I have obtained specimens of this form in the Province. It is browner and less clearly marked on the back than *Alauda a. cinerea.*

104. Alauda arborea.

Alauda arborea Shelley, p. 139.

On November 25th, 1906, I saw a Woodlark in the Giza Zoological Gardens. It was running about one of the lawns, and finally flew up into a tree. I have no other record of this species from the Province or from Egypt.

"Brehm mentions having met with the Woodlark once in Lower Egypt in the winter" (*Shelley*), so that it is possible that it may occasionally occur in this country.

105. Ammomanes deserti isabellina.

Melanocorypha arabs Brehm, Vogelfang, p. 132 (1855).

Ammomanes deserti isabellina Hartert, op. cit. i. p. 223.

The Desert-Lark is abundant near Helwan and in the Mokattam Hills. On February 9th, 1909, Mr. J. L. Bonhote saw an *Ammomanes,* which probably belonged to this form, at Abu Roash. This Lark breeds near Helwan, for I have obtained very young examples there in August.

I have not seen any specimens of *A. d. deserti* from Lower Egypt. All that I have examined belong to the paler, more sandy-coloured *A. d. isabellina.*

I have compared Giza specimens with Brehm's type of *Melanocorypha arabs* in the Tring Museum, and find that they exactly match.

106. Ammomanes phœnicura arenicolor.

Alauda arenicolor Sundevall, Œfv. K. Vet.-Akad. Förh. Stockholm, 1850, p. 128.

Ammomanes arenicolor (Sundev.); Shelley, p. 137.

Ammomanes phœnicura arenicolor (Sundev.); Hartert, Vög. d. pal. Fauna, ii. p. 224.

Although I have not actually met with this Desert-Lark in the Giza Province I include it in the present paper, as on February 28th, 1908, I obtained two specimens near Abbassia, a short distance from Cairo, and only just outside the Province boundaries.

107. Calandrella brachydactyla brachydactyla.

Calandrella brachydactyla (Leisler); Shelley, p. 141.

The Short-toed Lark is a regular visitor in spring and autumn and is usually met with in flocks.

108. Calandrella minor minor.

Calandrella minor Cabanis, Mus. Hein. i. p. 123 (1851—"N.O.-Afrika").

Calandrella minor minor (Cab.); Hartert, Vög. d. pal. Fauna, ii. p. 218.

I have only once met with this form in the Province, on February 25th, 1907, at the edge of the cultivation near the Giza Pyramids.

109. Sturnus vulgaris purpurascens.

Sturnus purpurascens Gould, P. Z. S. 1868, p. 219 (typ. loc. Erzeroum).

Sturnus vulgaris purpurascens Gould; Hartert, Vög. d. pal. Fauna, i. p. 46.

On November 13th, 1907, I shot an adult female of this form near Giza; it was accompanied by two other Starlings, but owing to their excessive shyness I was unable to get another example.

During the winter large numbers of Starlings frequent the cultivated lands, but they are nearly always unapproachable. I have specimens of two other forms of Starlings from Egypt: *Sturnus vulgaris vulgaris*, shot at Damanhour, and

S. v. poltaratskyi, shot by myself at Bilbeis in Lower Egypt.

Sturnus vulgaris purpurascens has not previously been recorded from Egypt.

110. Corvus cornix cornix.

Corvus cornix Linn.; Shelley, p. 159.

Corvus cornix sharpii Hartert, Vög. d. pal. Fauna, i. p. 10.

The Hooded Crow is abundant and resident in the alluvium of the Giza Province.

An example with much white in the wings and tail has frequented the Zoological Gardens for over a year and is still living there.

I cannot separate the Egyptian "Hoodie" from the Northern European form.

111. Corvus corax umbrinus.

Corvus umbrinus Shelley, p. 158.

The Brown-necked Raven is a common resident in the desert parts of the Province.

112. Cypselus apus murinus.

Cypselus pallidus Shelley, p. 172.

The Pale Swift is a common breeding-bird in the Province and I believe that a few stop for the winter.

I have not met with the Common Swift for certain, though it possibly passes through on migration. At a distance it is impossible to distinguish between the two forms.

113. Cypselus melba.

Cypselus melba Shelley, p. 171.

The Alpine Swift is an uncommon visitor to the Province during the autumn migration.

114. Caprimulgus europæus.

Caprimulgus europæus Shelley, p. 174.

The Nightjar is a regular visitor during both the spring and autumn migrations.

I once met with an example—an adult male—in December, but as it had half its tail missing I imagine that it had been delayed by injury from continuing its migration southwards.

115. CAPRIMULGUS ÆGYPTIUS.

Caprimulgus ægyptius Shelley, p. 175.

The Egyptian Nightjar is a resident, though I believe that its numbers are increased during the spring by migrants passing through on their way northwards.

116. IYNX TORQUILLA.

Yunx torquilla Shelley, p. 161.

The Wryneck is a regular visitor during both the spring and autumn migrations.

117. ALCEDO ISPIDA BENGALENSIS.

Alcedo bengalensis Shelley, p. 166.

This small Kingfisher arrives in the Giza Zoological Gardens in August and remains till April. I have no records of its remaining throughout the summer. Neither have I ever seen the common European Kingfisher, *A. ispida ispida.*

118. CERYLE RUDIS.

Ceryle rudis Shelley, p. 167.

The Pied Kingfisher is common and resident.

119. CORACIAS GARRULUS.

Coracias garrula Shelley, p. 168.

The European Roller is a spring and autumn visitor on migration.

In the autumn the adults appear to arrive first and are immediately followed by the young birds.

120. MEROPS APIASTER.

Merops apiaster Shelley, p. 169.

The Common Bee-eater is a regular visitor in very large numbers during both migrations.

121. Merops persicus.

Merops ægyptius Shelley, p. 170.

Merops persicus Sharpe, Cat. B. xvii. p. 66.

The Blue-cheeked Bee-eater appears to pass through the Province a little earlier than the preceding species. It probably breeds in certain parts of the Province. Major Sparrow tells me that he has seen it near Mazghouna in April, and from the appearance of specimens obtained in the Delta in May I have little doubt that they were about to nest there.

122. Merops viridis.

Merops viridis Shelley, p. 171.

The Little Green Bee-eater is a resident and breeds in the Giza Province. Dr. Walter Innes tells me that he has taken eggs near Mazghouna, where the bird nests in holes in the ground amongst the "Sont" (Acacia) trees.

123. Upupa epops epops.

Upupa epops Shelley, p. 155.

The Hoopoe is a regular visitor to the Province during the spring and autumn migrations.

124. Upupa epops major.

Upupa major Brehm, Vogelfang, p. 78 (1855).

A number of Hoopoes are resident in Lower Egypt, and examples of these, obtained in the Delta during the winter by Mr. J. L. Bonhote and myself, exactly match Brehm's type of *U. major*—which is a female adult (16/3/49) obtained by von Müller's expedition in Egypt and now preserved in the Tring Museum.

The following is a translation of Brehm's description of this bird :—"It is $\frac{1}{3}$ larger than all others, up to 12″ large, $2\frac{1}{2}$″ length of bill."

In our specimens the bill is *always* longer, and much deeper at the base, than in European examples and those obtained in Giza during migration. Some of them agree in size with Brehm's type, but the majority are not markedly larger than the common form, except as regards the bill.

This is a perfectly good form and it is interesting to rediscover it, though somewhat strange that it should have remained unrecognised all these years.

Although I have not met with this form up to the present in the Giza Province it probably occurs there, and I insert it in the present paper, as I consider that it is of importance to call attention to this long unrecognised bird. During the winter I have never met with any Hoopoes in the Province, but all those obtained while passing through during the migration-seasons—when they are very abundant —belong to the small race.

[To be continued.]

XXV.—*Notes on a Collection of Birds made in British East Africa.* By GERARD H. GURNEY, F.Z.S., M.B.O.U.

WITH the combined objects of shooting big game and collecting birds, I left England for East Africa on December 26th, 1908, and after an uneventful voyage arrived at Mombasa on January 15th, 1909. After spending three days there I went, with Sir Edmund Loder (himself a good naturalist and a splendid shot), by train to Nairobi. Our original intention had been to go on a shooting-trip to the little-known Lake Natron: but, finding that this plan was, for several reasons, impracticable, we decided first of all to make an expedition to the Kauti Plains. So after all the necessary arrangements for a long expedition into the interior had been made, we started in an easterly direction from Nairobi and marched across the Athi Plains to the Athi River as far as Donio Sabuk; thence we turned to the left, recrossed the Athi River, and proceeded over the Kauti Plains nearly as far as Mount Twiniango. Then we retraced our steps, and followed for some days the Thika River, which we finally crossed near Voroni. We came back by the east side of Donio Sabuk, returning to Nairobi on February 17th. Three days later, by the advice of Mr. F. J. Jackson, I went up to Naivasha, where I spent four weeks, chiefly camping at the south end of the lake and on the west side of the Ndabibi Plains. Leaving Naivasha on March 19th I joined Sir Alfred Pease at his Ostrich-farm at Kallima Theki, fifteen miles from Kapiti Plains Station, and remained there until I sailed for England on April 30th, having made, however, in the meantime, two short collecting-expeditions to Bondoni and Kibwezi.

So many papers have been lately written on British East Africa and so much of it is now well known that I need say but little concerning the aspect of the various parts of the continent into which I went. Our several expeditions enabled me to collect in three totally different and distinct types of country which in their fauna and flora shew most marked changes, broadly resolving themselves into open plain country, bush country, and forest.

I was accompanied by Mr. P. Groves, an experienced taxidermist, and with his assistance formed a collection of birds, including nearly 600 skins of 232 species. Many of these were prepared under difficulties, more especially during our first trip, when we were continually moving camp ; however, the majority of the skins reached England in first-rate condition.

In addition to collecting birds and shooting big game I brought home with me a large number of butterflies in papers, besides numerous small mammals and reptiles and a number of live birds, which I caught in traps taken out for the purpose or which the natives snared for me. Amongst these was a fine specimen of *Centropus superciliosus,* which had not previously been brought alive to England.

It is very difficult to successfully combine big-game shooting and scientific bird-collecting—one spoils the other,—and I invariably found that when out stalking an Antelope or a Rhinoceros I was certain to see and yet be unable to shoot *the* bird which I had been on the look out for so long. *Vice versa,* when collecting birds, without doubt *the* beast with the finest head would always appear. On our first saffari the greater part of the birds obtained were shot as we were riding along in the early morning from one camp to another, when it was more or less the rule *not* to shoot at any game unless the whole caravan, as occasionally happened, was "held up" by an angry rhinoceros; and birds were often shot, especially Weavers and smaller Warblers, which I did not know; these after being skinned were at once packed away, and I was unable to take any notes of their habits even if we came across the species again. This accounts for so many forms being represented by only single specimens in the collection. We would often get to a splendid locality for birds and be only able to stop there one night, when we required a week at least.

The following notes are on the birds which were actually obtained; many other species were seen, but when not satisfactorily identified I have made no mention of them. I am sure that there is still a great deal of good ornithological work to be done in this most fascinating and beautiful part of East Africa, especially in the wide belt of forest-country extending inland from Mombasa and the coast for some twelve or fourteen miles, and also in the large tract of little-known country to the west of Lake Naivasha, on the fringe of which I camped and where I found many birds which I had not seen before.

Well-worked though the country has lately been, I feel sure there are new forms and possibly new species still to be discovered.

1. CORVULTUR ALBICOLLIS. White-necked Raven.

Corvultur albicollis Less.

Iris brown; bill brown; feet brownish black.

The White-necked Raven was plentiful all round Theki, while at our camp at Bondoni several would come every evening and sit on a dead tree quite close to the tents and were tame and confiding; a pair had taken up their quarters on a small rocky kopje near Theki, and twice flew out of a little cave at the top: they may have been breeding, but it was impossible to get into the cave to see if there was a nest.

2. HETEROCORAX CAPENSIS. African Rook.

Heterocorax capensis Licht.

Iris dark brown; bill and legs black.

Specimens of the African Rook were obtained at Naivasha; it was seen nowhere else.

3. Buphaga erythrorhyncha. Red-billed Oxpecker.

Buphaga erythrorhyncha (Stanl.).

Iris red, eyelids yellow; bill red; legs dark brown.

The Red-billed Oxpecker seemed to abound wherever there were cattle, and might always be seen running over them to hunt for insects; the cattle generally appeared to enjoy being relieved of the pests which infested them.

4. Dilophus carunculatus. Wattled Starling.

Dilophus carunculatus Rüpp.

Iris hazel-brown; bill light yellow; feet flesh-coloured.

The Wattled Starling did not appear to be very common and was shy and difficult to approach, flying from bush to bush as we got near. I saw it near the Athi River, and in the tall trees near the Native Reserve at Kallima Theki there were a few pairs.

5. Spreo superbus. Spreo Starling.

Spreo superbus (Rüpp.).

Iris yellow; bill and legs black.

The Spreo Starling was seen in large flocks along the Athi River; at sunset the birds would fly noisily into the thorn-bushes near our camp, and after a good deal of fuss and quarrelling would settle down to roost for the night. A pair were breeding in April in the fence surrounding one of the ostrich-paddocks at Theki; the nest was constructed of grass and small sticks, with the hole at the side. There were four eggs, very round in shape and of a beautiful clear blue-green colour.

6. Lamprocolius chalybeus. Common Glossy Starling.

Lamprocolius chalybeus (Ehr.).

Iris yellow; bill and legs black.

This species was obtained at Naivasha, where it was common, and might generally be seen in pairs walking about the rough ground in front of the hotel, presumably hunting for insects; I have no notes of having observed it anywhere else.

7. Lamprocolius sycobius. Peters's Glossy Starling.

Lamprocolius sycobius Hartl.

Iris golden-yellow; bill and legs black.

We found Peters's Glossy Starling frequenting the thickly wooded hills of the Athi; only two specimens were obtained, both males. It has a variety of notes, some of which are very pleasing.

8. Pholidauges verreauxi. Verreaux's Glossy Starling.

Pholidauges verreauxi Bocage.

Iris yellow; bill and legs black.

Verreaux's Glossy Starling was only seen at Bondoni, where a single female was obtained on March 24th; the bird was sitting by itself at the bottom of a small dry donga in the middle of the plain, rather a remarkable place for this species; a male was seen, but not obtained, near our camp on the following day. It appears to be rather a rare species.

9. Oriolus galbula. Golden Oriole.

Specimens of the Golden Oriole were shot at Kallima Theki at the end of March; it was not very common and was met with nowhere else.

10. Oriolus rolleti. Black-headed Oriole.

Oriolus rolleti Salvad.

Iris reddish; bill dull pink; legs dark brown.

The Black-headed Oriole was locally common. I met with it at Naivasha and at Kibwezi: it was always in pairs and was very shy, invariably inhabiting the tall thick trees at the edges of small woods. I watched the male displaying one day with great interest. I was concealed amongst a grove of large trees of *Ficus* in which I knew were at least one pair of *O. rolleti*; after I had waited motionless for a very long time, the female flew out to the end of a bough in full view of the spot where I lay hidden, and presently began to utter a low call-note; the male bird then appeared and sidled along the bough; when he got close to the hen he expanded his tail, and with his head low and wings quivering made little darts at her; after a minute or two he sidled back along the bough and then began to softly whistle the most melodious notes, the hen all the time busily preening herself. What would have happened next I cannot tell, as I made a slight movement, and both birds at once flew off into thick cover.

11. Vidua principalis. Pin-tailed Whydah.

Vidua principalis (L.).

Iris brown; bill pink; legs brown.

Small flocks of Pin-tailed Whydahs were seen, always in the vicinity of water; one male appeared to be accompanied by about fifteen females. They are fond of sitting on the tops of tall reeds, and the males look very funny when the wind catches their extraordinary tails and blows them about, so that they only keep their perches with difficulty. Of the four males obtained three were in full breeding-plumage.

12. Penthetria laticauda. Red-naped Whydah.

Penthetria laticauda (Licht.).

Iris brown; bill black; legs brown.

The Red-naped Whydah was only obtained near the native shambas in the Reserve at Kallima Theki, and was by no means common there; on April 12th two males were shot which were both in mottled plumage.

13. Drepanoplectes jacksoni. Jackson's Whydah.

Drepanoplectes jacksoni, Sharpe.

Bill pale brown; iris brown; legs brown.

Jackson's Whydah was very common at Naivasha and a long series was obtained, the males varying enormously in the extent of the development of the breeding-plumage; by March 9th the majority were in nearly full dress, though on the 12th I shot two males out of one flock, one of which was still entirely in its mottled brown plumage, while the other was in very nearly full breeding-plumage. Parties of forty or fifty females were generally accompanied by seven or eight males. This species makes rather remarkable playing-grounds for itself, though I only saw the *males* using them; each playground is round and generally rather more than two feet across; the grass is completely trampled down except for a tuft which is left standing in the middle. It is a most extraordinary sight to see the males in full breeding-plumage with a tail a foot long performing in these dancing-grounds. They begin by scratching with their feet in the ground, and make the earth fly out beneath their tails, which they hold straight up, almost touching the back of their heads; in this position they have a ridiculous similarity to little cocks; they then spring into the air four or five times with quivering wings and feathers much puffed out; after a short rest the whole performance is repeated.

14. PYROMELANA XANTHOMELANA. Black-thighed Weaver-Finch.

Pyromelana xanthomelana (Rüpp.).

Iris dusky brown; bill brown; feet reddish-brown.

We shot the Black-thighed Weaver-Finch on the hills behind Theki; it was not uncommon, but I did not observe it anywhere else.

15. PYROMELANA CAPENSIS. Black-and-Yellow Weaver-Finch.

Pyromelana capensis Sharpe.

Iris dark brown; bill whitish; feet brown.

A single male of this species was shot at Naivasha on February 23rd; it was not obtained again.

16. PLOCEIPASSER MELANORHYNCHUS. Black-billed Weaver-Finch.

Ploceipasser melanorhynchus Rüpp.

Iris brown; bill black; legs brown.

Black-billed Weaver-Finches were common at two or three of our camps on the Athi River; they were very noisy, and at one place we found a large colony of their nests hanging from branches of small acacia-trees; these were big untidy structures made of fine grass; none of them contained eggs, though the birds were observed haunting the nests.

17. Philetærus arnaudi. Arnaud's Sociable Waxbill.

Philetærus arnaudi (Bonap.).

Iris dark brown; bill black; feet pale.

Arnaud's Sociable Waxbill was only seen on one occasion, when a single male was shot from the top of a tall tree on March 17th at Nairobi.

18. Quelea æthiopica. Ethiopian Red-billed Weaver-Finch.

Quelea æthiopica (Sundev.).

Iris brown; bill deep red; legs brown.

Specimens of the Ethiopian Red-billed Weaver-Finch were obtained at Kibwezi; it was not observed anywhere else.

19. Hypochæra ultramarina. Ultramarine Finch.

Hypochæra ultramarina (Gm.).

Iris brown; bill pinkish-white; legs orange-red.

In my experience the Ultramarine Finch was a rare bird; the only specimen obtained was sitting on the top of the thorn bonga round a native village near Kallima Theki, and proved to be a male in full plumage.

20. Munia caniceps. Grey-headed Silver-bill.

Munia caniceps Salvad.

Iris brown; bill and legs black.

A male of this species was shot at the Gerei River on April 14th. We saw it nowhere else.

21. Estrilda minor. Lesser Amaduvade.

Estrilda minor (Cab.).

Iris brown; bill red; feet black.

The Lesser Amaduvade was abundant and was met with in dense packs numbering from twenty to a hundred: it was generally seen in the vicinity of water. Specimens were obtained on the Athi River, at Naivasha and near Kibwezi.

22. Estrilda angolensis. Blue-breasted Waxbill.

Estrilda angolensis Linn.

Iris hazel; bill lightish lilac-coloured; legs brown.

The beautiful little Blue-breasted Waxbill was found amongst the native shambas near Theki, but not at all commonly, and only two examples were obtained, both females.

23. Granatina ianthinogaster. Violet-eared Waxbill.

Uræginthus ianthinogaster Reichen.

Iris and eyelids red; bill red; legs black.

I shot the Violet-eared Waxbill at Naivasha and at Kallima Theki: at the latter place there were generally three or four pairs in the fence round the Ostrich boma. They were charmingly tame and confiding, but I do not think that they were breeding when I was there in April.

24. Sporopipes frontalis. Speckled-fronted Weaver-Finch.

Sporopipes frontalis Bp.

Iris light brown; bill pink; legs and feet flesh-coloured.

A single male was obtained at Nairobi on March 22nd. I have no note of seeing it anywhere else.

25. Melanotis anoplexis. Black-eared Scarlet Weaver-Finch.

Melanotis anoplexis (Lafr.).

Iris brown; bill red; legs dusky red.

We shot the Black-eared Scarlet Weaver-Finch only in one place on the Athi River: a pair were in the tops of some tall acacia-trees near our camp on January 30th, and the following day we saw another bird in the same place.

26. Heterhyphantes reichenowi. Reichenow's Weaver-Finch.

Heterhyphantes reichenowi (Fischer).

Iris cream-coloured; beak black; legs brownish.

Reichenow's Weaver-Finch was obtained at Nairobi and Naivasha.

27. Sitagra ocularia. Smith's Weaver-Finch.

Sitagra ocularia (Gray).

Iris brown; bill black; feet brown.

Smith's Weaver-Finch was not at all uncommon at Naivasha and the series of three males and two females in the collection were all obtained there. They did not appear to live in the forest, but I often saw them right out on the plain, pecking about on the ground or sitting in the little bare thorn-trees which were scattered about.

28. Hyphantornis rubiginosus. Rüppell's Chestnut Weaver-Finch.

Hyphantornis rubiginosus (Rüpp.).

Iris brown; bill black; legs dark brown.

I think Rüppell's Chestnut Weaver-Finch is a decidedly rare bird. I only saw it once at Kibwezi, where a single male was obtained.

29. Hyphantornis spekii. Speke's Weaver-Finch.

Hyphantornis spekii Heugl.

Iris pale yellow; bill and legs brown.

A female Speke's Weaver-Finch was shot at Nairobi.

30. Passer ruficinctus. Kordofan Sparrow.

Passer ruficinctus Fischer & Reichen.

Iris pale yellow; bill horn-coloured; legs dusky brown.

The Kordofan Sparrow was obtained at Naivasha and at Kallima Theki; at the latter place it was extremely abundant and as ubiquitous and friendly as its common relation in England.

31. Sorella emini. Emin's Sparrow.

Sorella emini Hartl.

Iris brown; bill dusky brown; legs pale brown.

Emin's Sparrow was only seen at one place on the Gerei River, and where two males and a female were obtained on April 8th: it does not appear to be at all a common bird.

32. Serinus sharpii. Sharpe's Canary.

Serinus sharpei Neum.

Iris brown; bill yellowish; feet brown.

Sharpe's Canary was very common at Kallima Theki in the low bushes round our camp. It has rather a pretty little song and is a conspicuous bird when sitting at the top of a small bush in the early morning.

33. Serinus affinis. Streaked-brown Canary.

Serinus affinis Richmond.

Iris brown; bill and feet brown.

A female of this species was obtained at Naivasha on March 14th. I believe it is supposed to be rather a common bird there, but, so far as I know, I never saw another example.

34. Serinus fagani. Fagan's Canary.

Serinus fagani Sharpe.

Iris brown; bill and legs dusky black.

Fagan's Canary seemed to be distributed everywhere. Specimens were obtained at the Athi River and on the Kapiti Plains. They were generally seen in pairs or small flocks on the dried-up grassy plains.

35. Emberiza flaviventris. Golden-breasted Bunting.

Emberiza flaviventris (Bonn. & V.).

Iris brown; bill dark brown; legs brown.

We found the Golden-breasted Bunting at Bondoni on March 4th; it was not very common and was invariably seen amongst wooded country, generally perching on stones and rocks in preference to boughs.

36. Fringillaria tahapisi. Rock-Bunting.

Fringillaria tahapisi (Smith).

Iris brown; bill and legs brown.

I found the Rock-Bunting fairly abundant on the Athi Plains, but never very far from water: it was generally quite tame and fearless.

37. Pyrrhulauda leucoparia. Fischer's Sparrow-Lark.

Pyrrhulauda leucopareia Fischer & Reichen.

Fischer's Sparrow-Lark was only seen near the Athi River in February: it was generally in pairs and was often observed in the evenings sitting near some track or on the sandy plain, perhaps a mile from the river.

38. Mirafra athi. Athi Lark.

Mirafra athi Hartert.

Iris yellow, in immature birds brown; bill and feet brown.

The Athi Lark was obtained near the Athi River, at Naivasha and on the Kapiti Plains: at the latter place it was extremely abundant and a long series was obtained. It was a conspicuous bird all over the plains round Kallima Theki and Kapiti. At the beginning of April a nest was found. This was placed in a slight depression of the ground, partially concealed by a tuft of grass, and was made of pieces of dead grass. It contained four young, apparently only a few days old, one of which I took and skinned.

39. Mirafra albicauda. White-tailed Lark.

Mirafra albicauda Reichen.

Iris hazel; bill dusky; feet brown.

Only one specimen of the White-tailed Lark was obtained, and this was shot at Kallima Theki on April 8th; I believe it is distributed fairly commonly over the Kapiti Plains, and probably I overlooked it.

40. Mirafra fischeri. Fischer's Bush-Lark.

Mirafra fischeri Reichen.

Iris brown; upper mandible dark horn-coloured, lower light brown; legs brown.

Fischer's Bush-Lark was commonly distributed. It was always heard in the early morning, when its extraordinary rattle-like note was very audible. It flies up from the ground and ascends into the air to a great height, frequently out of sight, all the time uttering its muffled rattle; it then suddenly descends almost to the ground and swerves off for a considerable distance before alighting.

41. Macronyx croceus. Yellow-breasted Lark.

Macronyx croceus (Vieill.).

The Yellow-breasted Lark was extremely abundant all round Kallima Theki. It was generally seen in pairs and was very tame and confiding, flying up from the ground and perching on the topmost twig of a small tree or bush, when its bright yellow breast was very conspicuous, and it continually uttered its short pleasant song.

42. Macronyx wintoni. Red-breasted Long-claw.

Macronyx wintoni Sharpe.

Iris brown; bill and legs brown.

A single female Red-breasted Long-claw was obtained on April 17th near the camp at Kallima Theki. I do not think that it can be a very common species, as such a conspicuous bird would not be easily overlooked.

43. Anthus sordidus. Brown Pipit.

Anthus sordidus Rüpp.

Iris brown; bill and legs brown.

Specimens of the Brown Pipit were obtained on the Kapiti Plains, where it was not uncommon.

44. Anthus rufulus. Indian Pipit.

Anthus rufulus (V.).

Iris brown; bill brown; legs yellowish.

An extremely abundant species all over the Kapiti Plains.

45. Anthus tenellus. Yellow-breasted Pipit.

Anthus tenellus (Cab.).

Iris and bill dark brown.

The Yellow-breasted Pipit is a rare bird and was only seen on one occasion, when a male in full plumage was shot near the Gerei River. It was by itself amongst the small scrub which fringes the river, and a thorough search revealed no sign of another. It probably has much the same habits as *Anthus rufulus*.

46. Anthus cervinus. Red-throated Pipit.

Anthus cervinus (Pall.).

Iris brown; bill and legs dark brown.

This is another species of which only one specimen was obtained, whether from our overlooking the birds or from their scarcity I am unable to say.

A female was shot at Ol Donyo Sambuk on January 28th.

47. Motacilla flava. Black-headed Yellow Wagtail.

Motacilla flava Linn.

Iris brown; bill and legs black.

This species was abundant everywhere.

48. Nectarinia kilimensis. Kilimanjaro Bronze Sunbird.

Nectarinia kilimensis Shelley.

Iris brown; bill and legs black.

I found the Kilimanjaro Bronze Sunbird in most of the localities we visited: at Naivasha it was common and four males and two females were obtained.

49. Nectarinia reichenowi. Reichenow's Sunbird.

Nectarinia reichenowi Shelley.

Reichenow's Sunbird was obtained among the native shambas near Kallima Theki: it was not at all uncommon there in April, and appeared to be greatly attracted by a purple flowering plant of the Pea tribe; none of the males obtained were in full plumage.

50. Nectarinia jacksoni. Jackson's Sunbird.

Nectarinia jacksoni Neumann.

Iris brown; bill and legs black.

A pair of Jackson's Sunbirds were obtained at Naivasha on March 4th, but I saw the species nowhere else.

51. Cinnyris microrhynchus. East-African Bifasciated Sunbird.

Cinnyris microrhynchus Shelley.

Iris brown; bill and legs black.

This species was seen at Theki and specimens were shot on the hill behind our camp, where they were constantly attracted by a species of aloe and would run up and down its branches hunting for insects. I never saw the bird feeding at any of the numerous flowering shrubs which abounded at Theki, and upon which the other species of Sunbirds were often seen.

52. Cinnyris æquatorialis. Scarlet-chested Sunbird.

Cinnyris æquatorialis Reichen.

We found the Scarlet-chested Sunbird fairly distributed wherever we went.

53. Cinnyris kirki. Eastern Amethyst Sunbird.

Cinnyris kirkii Shelley.

The Eastern Amethyst Sunbird was generally seen among thick bush and was not very common. I obtained it at Kibwezi and in the Native Reserve near Kallima Theki.

54. Cinnyris falkensteini. Falkenstein's Buff-breasted Sunbird.

Cinnyris falkensteini Fischer.

Iris brown; bill and legs black.

Two males in immature plumage were shot at Naivasha, and this species was also obtained at Kapiti Plains.

55. Anthothreptes zambesiana. Zambesi Collared Sunbird.

Anthothreptes zambesiana Sharpe.

The Zambesi Collared Sunbird was obtained at Kibwezi, where we saw several individuals crawling about the long creepers which hang from the tall trees, in their ceaseless search for the small insects which form their food, and paying no attention to the white blossom-covered acacia-trees which were then in full flower and which were a great attraction to other Sunbirds.

56. Parus albiventris. White-breasted Tit.

Parus albiventris Shelley.

Specimens were obtained from Naivasha and Kapiti Plains.

57. Lanius humeralis. Eastern Fiskal Shrike.

Lanius humeralis Stanl.

Iris brown; bill and feet black.

We saw this extremely common bird wherever we went.

58. Lanius caudatus. Long-tailed Shrike.

Lanius caudatus Cab.

We generally found the Long-tailed Shrike not uncommon in bush-country. Specimens were obtained at Nairobi, Thika River, and at Kapiti. It was generally seen in pairs, but was shy and not easily approached. I several times watched one as it sat on the outside branch of a tree, and from this elevated post made repeated flights, like a Drongo or Flycatcher, at some passing insect. On three different occasions I found dead lizards impaled on thorns; this may have been done by this or by the previous species, but *L. caudatus* was seen to fly from one bush on which lizards were impaled.

59. Lanius minor. Lesser Grey Shrike.

Lanius minor Gm.

Bill and feet black.

A common bird, of which I shot specimens at Kallima Theki and elsewhere.

60. Lanius collurio. Red-backed Shrike.

Lanius collurio L.

I never saw the Red-backed Shrike anywhere until March 31st, when a large north-going migration appeared at Kallima Theki, and for a week it was an extremely abundant species. After this all the birds disappeared as suddenly as they came, and, except for a few belated stragglers, I did not see the species again.

61. Lanius phœnicuroides. Rufous-tailed Shrike.

Lanius phœnicuroides Severtz.

Iris brown; bill and legs black.

This Shrike appeared to be common amongst the thick bush near the Athi. Specimens were also obtained near the Thika River, but I have no note of having observed it at Naivasha.

62. Eurocephalus anguitimens. Smith's Wood-Shrike.

Eurocephalus anguitimens Smith.

Iris brown; bill and legs black.

A single specimen of Smith's Wood-Shrike was shot at Kibwezi on April 8th. It proved to be a male, and was the only one I got, though I saw the species again at Bondoni. I do not think that it is rare, but many of the Wood-Shrikes are such adepts at concealing themselves in the thick bush, that it is difficult to say to what extent they are distributed.

63. NILAUS MINOR. Lesser Bush-Shrike.

Nilaus minor Sharpe.

Iris brown; bill very dark slate-blue; legs slate-coloured.

The Lesser Bush-Shrike was very shy and not often seen. Specimens were obtained at the Thika River and at Kibwezi.

64. TELEPHONUS SENEGALENSIS. Red-winged Bush-Shrike.

Telephonus senegalensis Shelley.

Iris brown; bill black; legs slate-coloured.

Specimens of the Red-winged Bush-Shrike were obtained near the Athi River. It was always found amongst the densest underwood and jungle, and, if I managed to flush it, would fly with two or three harsh metallic notes to the nearest available cover. One which I shot had in its bill a very large red beetle.

65. DRYOSCOPUS FUNEBRIS. Slate-backed Bush-Shrike.

Dryoscopus funebris Reichen.

Iris brown; bill and legs black.

This species was obtained only at Kibwezi. Its deep note, like the sound of a Jew's harp, was there heard from the thick *Euphorbia*-bush.

66. DRYOSCOPUS ÆTHIOPICUS. Ethiopian Bush-Shrike.

Dryoscopus æthiopicus (Gmel.).

Amongst all the sounds in the bush, nothing is more striking than the note of the Ethiopian Bush-Shrike. It is one of the most conspicuous and attractive to be heard anywhere, being full, round, metallic, and bell-like, in two cadences. The male bird always calls first, and is so quickly answered by the female that the hearer might suppose that all the notes were uttered by the same bird. This was a common species wherever we went in East Africa.

67. DRYOSCOPUS SUAHELICUS. Puff-backed Bush-Shrike.

Dryoscopus suahelicus Neum.

Iris red; bill black.

A single female was shot at Nairobi.

68. Crateropus hypoleucus. White-bellied Babbler.

Crateropus hypoleucus Cab.

The White-bellied Babbler was common at Kallima Theki and was always seen in large family parties, frequenting the low bushes and trees in the dry dongas. When disturbed, the birds will fly one after the other from tree to tree, following each other almost in single file. They were very noisy, and one which I kept alive for some weeks in a cage would commence a kind of discordant chuckling at daybreak, which it kept up throughout the day. I fed this bird on caterpillars and insects, and I believe that if it had not been rather heavily shot in the wing it would have lived, as it became perfectly tame and confiding.

69. Pycnonotus layardi. Black-capped Bulbul.

Pycnonotus layardi Gurney.

Iris brown; bill and legs black.

Abundant everywhere.

70. Chlorocichla mombasæ. Mombasa Bulbul.

Chlorocichla mombasæ Shelley.

The Mombasa Bulbul, in my experience, was a rare bird, and only one female was shot at Kibwezi, on April 7th.

71. Phylloscopus trochilus. Willow-Wren.

Phylloscopus trochilus (Linn.).

72. Hypolais pallida. Olivaceous Tree-Warbler.

Hypolais pallida (H. & E.).

Iris brown; bill and legs dark brown.

The Olivaceous Tree-Warbler was very common everywhere.

73. Acrocephalus phragmitis. Sedge-Warbler.

Acrocephalus phragmitis (Bechst.).

This species was shot at the Gerei River and Kallima Theki, but I did not see it at Naivasha.

74. Sylviella jacksoni. Jackson's Bush-Warbler.

Sylviella jacksoni Sharpe.

Jackson's Bush-Warbler was not often seen and only in the thickest scrub.

75. Apalis neglectus. Alexander's Bush-Warbler.

Apalis neglectus (Alexander).

A single male of this species was shot at Ol-Donyo-Erok on April 15th; it was a solitary bird and was seen creeping about in the tall grass.

76. Camaroptera chrysocnemis. Abyssinian Green-backed Bush-Warbler.

Camaroptera chrysocnemis (Licht.).

Bill blackish; feet and legs dull red.

Apparently not uncommon near Nairobi and thence along the Athi River; specimens were also obtained near Kallima Theki.

77. Calamocichla jacksoni.

Only one specimen was obtained, at Naivasha.

78. Calamonastes simplex. Brown Bush-Warbler.

Calamonastes simplex Heugl.

The Brown Bush-Warbler was obtained singly in a good many places, though I never found it very common anywhere.

79. Phyllolais pulchella. Hinde's Bush-Warbler.

Phyllolais pulchella Hartl.

Bill yellowish; legs brown.

Only two specimens of Hinde's Bush-Warbler were shot—both in the scrub near the Ol Gerei River.

80. Prinia mystacea. Tawny-flanked Grass-Warbler.

Prinia mystacea Rüpp.

Iris light brown; bill and legs brown.

81. Cisticola curvirostris. Brown Fantail-Warbler.

Cisticola curvirostris Sharpe.

Iris dark hazel; bill yellowish; legs light brown.

This common species was seen everywhere.

82. Cisticola nuchalis. Reichenow's Fantail-Warbler.

Cisticola nuchalis Reichenow.

At Kallima Theki, where this species was not uncommon, two or three pairs were always hopping about in the bushes close to our tents and were absurdly tame; on one occasion a little Warbler, which I think was of this species, flew to a gauze cage in which were some small lizards, and, clinging to the side, endeavoured to get at the flies which I had put in for the lizards to feed on. They had, no doubt, seen them from the bush close by.

83. Cisticola strangii. Strange's Fantail-Warbler.

Cisticola strangei Sharpe.

Bill light brown; legs light brown.

Abundant everywhere.

84. Cisticola hindii. Hinde's Fantail-Warbler.

Cisticola hindei Sharpe.

Hinde's Fantail-Warbler was widespread and frequented the long grass in the more open country. It has a fairly strong flight and a very distinctive sharp note.

85. Cisticola rufa. Fraser's Grass-Warbler.

Cisticola rufa (Hartl.).

Fraser's Grass-Warbler was rather rare, and only two examples were shot.

86. Melocichla orientalis. Sharpe's Large Grass-Warbler.

Melocichla orientalis Sharpe.

I suspect that Sharpe's Large Grass-Warbler is commoner than I thought, but I only identified it twice, and it is represented in the collection by a single example which was found caught in one of my small mouse-traps at Theki. I was seldom able to identify any of the smaller Warblers until I returned to England, and it was difficult to take any notes of the habits of a bird when I did not know whether I had seen it previously or not, and equally difficult, when so many species are much alike, to know whether I had got a specimen before—as, owing to our being continually on the move, every skin had to be packed up directly it was dried.

87. Erithacus gutturalis. White-throated Robin.

Erithacus gutturalis (Guérin).

Iris brown; bill and legs black.

The White-throated Robin was not often noticed owing to its shy retiring habits; it was always seen creeping about in the thickly-tangled undergrowth of the small ravines and dongas. Two males and a female were shot at Kallima Theki.

88. Myrmecocichla cryptoleuca. Mountain Chat.

Myrmecocichla cryptoleuca Sharpe.

The Mountain Chat was a conspicuous bird at Naivasha, where it was very common, generally in pairs, on the rough ground at the east side of the lake; they were tame and fearless, and had a rapid flight, but never went far at a time.

89. Pratincola axillaris. West-African Stonechat.

Pratincola axillaris Shelley.

Iris brown; bill and legs black.

The West-African Stonechat was only obtained at Naivasha.

90. Monticola saxatilis. Rock-Thrush.

Monticola saxatilis (Linn.).

Iris brown; bill and legs black.

The Rock-Thrush was common at Kallima Theki.

91. Monticola rufocinereus. Abyssinian Rock-Thrush.

Monticola rufocinereus (Rüpp.).

A female was shot at Naivasha on March 9th.

92 Saxicola schalowi. Schalow's Wheatear.

Saxicola schalowi Fischer & Reichen.

I only met with this Chat at Naivasha, where it was the commonest species of Wheatear and always to be found perched conspicuously on a stone or rock, restlessly opening and shutting its wings and flirting its tail or alternately raising and depressing its whole body.

93. Saxicola morio. Siberian Pied Chat.

Saxicola morio Hempr. & Ehr.

The Siberian Pied Chat was not an uncommon species in the open bush near the Athi River, and wherever a bit of ground had been burnt by a forest fire we were sure to see several individuals. It was always very shy and difficult to approach, not flying far at a time, but just keeping out of gunshot.

94. Thamnolæa subrufipennis. White-shouldered Bush-Chat.

Thamnolæa subrufipennis Reichen.

Iris brown; bill and legs black.

A pair of White-shouldered Bush-Chats were breeding in the cleft of a rock on the side of a bushy kopje near Kallima Theki. I was unable to get down to the nest; but I repeatedly saw both male and female birds fly into the hole, and on one occasion the female carried in a small grub in her beak : so no doubt there were young ones.

It had a very sweet song, and the cock-bird would sit on a projecting rock above the nest singing beautifully; but it was very shy, and if I made the slightest movement would at once dive off into the thick foliage below.

95. Cossypha heuglini. Von Heuglin's Chat-Thrush.

Cossypha heuglini Hartl.

Von Heuglin's Chat-Thrush was sparingly met with along the Athi River, but was very difficult to procure owing to its shy retiring habits and the thick undergrowth in which it lives. Occasionally I came upon it scratching for insects in the open ground, whence it would immediately fly to the nearest cover.

96. Cossypha iolæma. East-African Chat-Thrush.

Cossypha iolæma Reichen.

Only obtained once on Kapiti Plains, on March 26th.

97. Erythropygia brunneiceps. Brown-headed Chat-Thrush.

Erythropygia brunneiceps Reichen.

Iris brown; bill and legs dusky.

The Brown-headed Chat-Thrush was a common species at Kallima Theki, and a long series, which shewed a considerable amount of variation, was obtained.

98. Bradyornis pumilio. Grey Robin-Shrike.

Bradyornis pumilio Sharpe.

Iris brown ; bill and legs black.

A secretive, lurking bird, always difficult to obtain, of which only two examples were shot, both at Kallima Theki.

99. Bradyornis grisea.

Bradyornis grisea Reichen.

Examples of this common bird were obtained on the Athi River and at Kapiti.

100. Bradyornis ater. Black Flycatcher.

Bradyornis ater Sundev.

Bill and legs black.

Widely distributed, but in my experience an uncommon species.

101. Dioptrornis fischeri. Fischer's Robin-Shrike.

Dioptrornis fischeri Fischer & Reichen.

Iris brown; bill horn-blue ; feet black.

Fischer's Robin-Shrike was fairly common wherever we went, in suitable localities.

102. Batis puella. Sylph-like Flycatcher.

Batis puella Reichen.

Bill and legs black.

This Flycatcher was seen amongst the tops of the tall trees. It had a harsh, rather discordant little song, and seemed to be of a quarrelsome disposition, as I saw it fly out and attack another of its own species, almost in the same way as a Drongo or Shrike would.

103. Terpsiphone suahelica. East-African Paradise Flycatcher.

Terpsiphone perspicillata suahelica Reichen.

Iris brown, eyelids blue ; bill and legs slate-coloured.

The Paradise Flycatcher was generally obtained amongst high trees and always in the vicinity of water.

104. MUSCICAPA GRISOLA. Spotted Flycatcher.

Muscicapa grisola Linn.

A common species everywhere.

105. BUCHANGA ASSIMILIS. African Drongo.

Buchanga assimilis (Bechst.).

Iris red ; bill and legs black.

We generally saw the Drongo in open forest-country, but except by the Thika River it was rather scarce. It was always conspicuous, sitting at the end of a dead bough, from which it would make short flights to catch the passing insects, and return immediately to its perch ; it has a harsh rather grating note.

106. COTILE PALUDICOLA. South-African Sand-Martin.

Cotile paludicola Tristr.

Iris brown; bill dark brown; feet light brown.

Common at Naivasha, where it was breeding in the rocky cliffs on the east side of the Lake ; also obtained at the Gerei River.

107. HIRUNDO RUSTICA. Common Swallow.

Hirundo rustica Linn.

Large flocks of *H. rustica* appeared on the Kapiti Plains in the fourth week of March, all on northward migration.

108. HIRUNDO PUELLA. Smaller Stripe-breasted Swallow.

Hirundo puella Temm. & Sch.

The Smaller Stripe-breasted Swallow was not uncommon at two or three of our camps on the Athi.

109. HIRUNDO EMINI. Emin's Swallow.

Hirundo emini Reichen.

Iris brown ; bill and legs black.

This fine Swallow was common at Naivasha, where it was breeding under the eaves of the hotel, though on March 14th none of the nests contained eggs. At Kallima Theki in the middle of April a pair were building in the kitchen at Sir Alfred Pease's house, and were quite undisturbed by the constant coming and going. I shot one at a little rain-pool in the middle of the flat Kapiti Plains, which had its mouth full of soft mud; it must have been fully seven miles away from any possible breeding-place, and the rate of flight must be very rapid to have enabled this bird to reach its nest before the mud it was carrying had become too hard to use.

110. Ptyonoprogne rufigula. Fischer's Rock-Martin.

Ptyonoprogne rufigula (Salvad.).

This species was only seen at Kapiti, where great numbers were breeding on ledges in caves, but none of the nests I was able to reach had eggs on April 17th.

111. Psalidoprocne massaica. Masai Rough-winged Swallow.

Psalidoprocne massaica Neumann.

Iris brown; bill black; legs brown.

The Masai Rough-winged Swallow was a rare bird, and the only place where I met with it was in a little open glade amidst thick forest near the Thika. At this spot a number of these little Swallows were flying backwards and forwards, and three or four were shot, but it was dificult to avoid damaging them as they are very delicate. We camped not very far from this locality, and on going back to the little clearing the following day I found the Swallows still hawking backwards and forwards and yet not a trace of one to be seen anywhere else. There must have been a very large and unlimited supply of insects just there.

112. Psalidoprocne albiceps. White-headed Rough-winged Swallow.

Psalidoprocne albiceps Sclater.

This is supposed to be a scarce species in East Africa, but I found it rather commonly distributed, and examples were obtained at the Thika, Kallima Theki, and Bondoni. It was seen singly and in small flocks.

113. Upupa africana. South-African Hoopoe.

Upupa africana Bechst.

Iris brown; bill dark brown or black; legs black.

114. Irrisor erythrorhynchus. Red-billed Wood-Hoopoe.

Irrisor erythrorhynchus (Lath.).

Iris brown; bill red; feet coral-red.

The Red-billed Wood-Hoopoes are not particularly shy birds and I was twice able to watch them hunting for caterpillars and insects on the trunk and boughs of a large tree. They run up and down the stem exactly like a Woodpecker does, occasionally head downwards, and every now and then give a kind of jump upwards, using the tail as a means of support, but not their wings; possibly this is the reason why nearly all those we shot had ragged tails. We used to see them in flocks of from six to eight, or less, and when leaving a tree they hardly ever all fly off together, but generally singly. They are very noisy birds, which chatter loudly, and are said to possess a very disagreeable smell, but I never detected anything the least unpleasant.

115. Rhinopomastus cabanisi. Cabanis's Wood-Hoopoe.

Rhinopomastus cabanisi de Fil.

Iris brown; bill yellow, tip black; legs black.

Cabanis's Wood-Hoopoe was a rare bird and only seen on one occasion, when one was shot out of a little flock of four which flew out of a tree near the Gerei River; the remaining three were very shy and would not let me approach within gunshot again; it has an undulating dipping flight like a Bee-eater, and the flock that I pursued were silent.

116. Cypselus affinis. White-rumped Swift.

Cypselus affinis Bocage.

Bill and legs black.

The White-rumped Swift was found breeding on the precipices of Longonot, near Naivasha, in company with *C. æquatorialis.* Their nests, which I was able to look into with my glasses but not to reach, were apparently made almost entirely of saliva; at any rate they look distinctly semitransparent and as if they were made out of horn; they were lined with feathers and I certainly saw eggs in two instances. Four or five nests were built touching each other under a projecting bit of rock, and a few feet away would be a cluster of three or four more.

117. Cypselus æquatorialis. Great Equatorial Swift.

Cypselus æquatorialis Müll.

The Great Equatorial Swifts were very abundant on one cliff at Longonot, where they were breeding in company with the previous species, *C. affinis*, but higher up the precipice, and I was not able to see any of their nests. They fly exceedingly rapidly, and having very tough skins are hard to kill. The wing-measurements of my specimens were 8·1 inches.

118. Caprimulgus fossii. Mozambique Nightjar.

Caprimulgus fossii Hartert.

Iris brown; bill black; legs dark brown.

The Mozambique Nightjar was abundant round Lake Naivasha, but was not met with anywhere else.

119. Caprimulgus frenatus. Salvadori's Nightjar.

Caprimulgus frenatus Salvad.

A male specimen of Salvadori's Nightjar was shot one evening flying round our tents at a camp on the Athi, and the following day a pair of Nightjars, which I believe to have been of this species, got up at my feet, but I was unable to shoot them as I was just going to fire at a Waterbuck after a long and critical stalk.

120. Caprimulgus europæus. European Nightjar.

Caprimulgus europæus Linn.

This species was abundant on Kapiti Plains.

121. Caprimulgus lentiginosus. Freckled Nightjar.

Caprimulgus lentiginosus Smith.

Bill and legs dark brown.

This large Nightjar was observed in the thick brushwood by the Thika River, but it was not very plentiful.

122. Caprimulgus inornatus. Plain Nightjar.

Caprimulgus inornatus Heugl.

A pair of these birds were shot at Kallima Theki on March 31st. They got up from some scrubby open ground and I hoped that I might find the eggs, but a close search revealed no sign of them. They look very small on the wing and of quite a bright red colour.

123. Coracias garrulus. European Roller.

Coracias garrulus L.

Iris brown; bill black; legs yellowish.

During a large prairie-fire on the Kauti Plains great numbers of Rollers were attracted by the thousands of disturbed insects, and together with innumerable Harriers, Kestrels, and Bee-eaters flew in and out of the flames to catch the prey. Otherwise we did not see this species very frequently.

124. Merops apiaster. European Bee-eater.

Merops apiaster L.

Large flocks of Bee-eaters passed over our camp one evening on the Kauti Plains, all flying in a northerly direction. Two examples were shot and proved to be *M. apiaster*. This was the only time this species was seen, so far as I know.

125. Merops nubicus. Crimson-breasted Bee-eater.

Merops nubicus Gmel.

Iris red; bill and legs black.

This beautiful species was obtained at Kibwezi. It appears to be distributed the whole way from the coast as far as Voi. On my journey up, I saw it in several places sitting on the telegraph-wires.

126. Melittophagus albifrons. White-fronted Bee-eater.

Melittophagus albifrons (Cab. & Heine).

Iris red; bill and legs black.

White-fronted Bee-eaters were plentiful round the shores of Lake Naivasha, alighting on the tops of the reeds that fringed the lake-side. They were extremely tame, and once I stood within three yards of one while it made short flights into the air, always returning to the same perch with, certainly twice, an insect in its beak.

127. Melittophagus pusillus. Little Bee-eater.

Melittophagus pusillus (P. L. S. Müll.).

Bill and legs black.

Fairly common.

128. Ceryle rudis. Pied Kingfisher.

Ceryle rudis Linn.

Iris brown; bill and legs black.

The Pied Kingfisher was constantly seen.

129. Halcyon semicærulea. African Grey-headed Kingfisher.

Halcyon semicærulea Rüpp.

Iris brown; bill and feet bright red.

We often saw this Kingfisher on the Thika and Athi Rivers, but I did not notice it at Naivasha.

130. Halcyon chelicutensis. Striped Kingfisher.

Halcyon chelicutensis (Stanley).

Iris brown; bill and legs red-brown.

The Striped Kingfisher was as often seen far away from water as near it; when in the forest country its food is entirely of insects. It was not at all uncommon.

131. Corythornis cyanostigma. Malachite-crested Kingfisher.

Corythornis cyanostigma (Rüpp.).

Iris brown; bill and legs bright red.

Plentiful everywhere.

132. Colius leucotis. White-eared Coly.

Colius leucotis Rüpp.

Iris brown; upper mandible dark brown, lower mandible whitish; legs red.

The White-eared Coly was common and we met with it wherever we went. We invariably saw large family parties of from seven to twelve, and when disturbed the whole flock would fly out of a bush together. Three that were shot contained small larvæ and a beetle, which proves that they are not *entirely* fruit-eaters as some writers have said. They roost, anyhow occasionally, head downwards and always touching each other. The Masai eat them and are very adept at knocking them down with their "knob-kerries" as they fly from bush to bush; partly on this account more live Colies were brought to me by my "boys" than any other bird, and I have found them easy to keep in confinement both abroad and in England.

133. Bucorax abyssinicus. Ground-Hornbill.

Bucorax abyssinicus (Bodd.).

Iris brown; bill black, with red patch at base of upper mandible; wattles bright red; skin round eye and bare part of throat slaty blue; legs black.

The Abyssinian Ground-Hornbill was by no means uncommon, and was generally seen in twos and threes; at a little distance its resemblance to a Turkey-cock is very marked. The birds were very shy and difficult to approach. I never saw them perching, but several times watched them hunting for food on the ground, pecking at the earth with their strong bills; they are said to kill snakes, but I never had the good fortune to see one do so.

134. Mesopicus phæocephalus. Blood-breasted Woodpecker.

Mesopicus phæocephalus (Swains.).

Iris brown; bill black; legs dark slate-coloured.

A female Blood-breasted Woodpecker was shot at Naivasha on February 24th; this was the only one obtained.

135. Thripias namaquus. Bearded Woodpecker.

Thripias namaquus Fischer.

We found the Bearded Woodpecker in small numbers wherever we went.

136. Indicator indicator. Stripe-winged Honey-Guide.
Indicator indicator (Gm.).

Iris brown; bill brown; legs dark brown.

The Stripe-winged Honey-Guide was obtained at several of our camps on the Athi and also near Kibwezi. Near one of them was a tall acacia-tree in which a swarm of bees had their nest; there was always a Stripe-winged Honey-Guide near this tree, and when one bird was shot another would very soon take its place.

137. Indicator minor. Little Honey-Guide.
Indicator minor Steph.

Iris brown; bill and legs dark brown.

In my experience this was the scarcest of the Honey-Guides that we saw, and only one specimen was shot, a male, at a camp on the Gerei River.

138. Indicator major. Yellow-throated Honey-Guide.
Indicator major Steph.

Specimens were obtained near the Thika River and at Kallima Theki; it was not very common. I generally met with it amongst tall trees in open forest-country.

139. Lybius senex. Reichenow's White Barbet.
Lybius senex Rchw.

Bill and legs black.

Reichenow's White Barbet was only seen once; a male was shot, sitting on a dead tree, at Kibwezi on April 7th. I think that it is an uncommon species.

140. Barbatula jacksoni. Jackson's Barbet.
Barbatula jacksoni Sharpe.

Bill black; iris brown; feet slate-grey.

This pretty little Barbet was shot amongst some tall gum-trees near the Club at Nairobi.

141. Cuculus canorus. European Cuckoo.
Cuculus canorus Linn.

142. Cuculus clamosus. Black Cuckoo.
Cuculus clamosus Lath.

Iris brown; bill dark brown; legs yellowish.

The Black Cuckoo was seen occasionally at Kallima Theki, but it was very shy and only one example was shot; it was invariably seen amongst the small trees fringing the sides of the dongas. It has a loud harsh note.

143. COCCYSTES JACOBINUS. Black-and-White Cuckoo.

Coccystes jacobinus Cab. & Heine.

Iris dark brown; bill brown; feet black.

This was the commonest Cuckoo at Theki, and might often be seen near our camp, though it was always rather wild and unapproachable. I have no note of seeing it anywhere else.

144. COCCYSTES CAFER. Le Vaillant's Cuckoo.

Coccystes cafer Sharpe.

Iris brown; bill and legs dark brown.

Only seen twice, on the Kapiti Plains; both birds, which were females, contained the remains of caterpillars in the stomach.

145. CENTROPUS SUPERCILIOSUS. White-eyebrowed Lark-heeled Cuckoo.

Centropus superciliosus (H. & E.).

The White-eyebrowed Lark-heeled Cuckoo is only found in the dense scrub and jungle fringing the edges of rivers and lakes, amongst which it crawls about searching for food. I met with it all along the Thika and also at Naivasha; it is nowhere rare, but not very often seen on account of its skulking habits. The note is one of the most noticeable to be heard in East Africa, and sounds like water being poured out of an inverted narrow-necked bottle. These birds run at a great pace, like a Rail. I successfully brought one home alive; it was the first living specimen of *C. superciliosus* to reach England: from the day that it was caught it was perfectly tame and a most easy bird to keep, feeding voraciously on insects, fruit, sopped bread, &c. In their wild state this species is probably to a certain extent carnivorous: mine prefers a dead bird or a mouse to anything else; and the sharp, strong bill is well adapted for killing small birds. An account of my tame *Centropus* appeared in the 'Avicultural Magazine' for February 1909.

146. Corythaix porphyreolopha. Crimson-winged Plantain-eater.

Corythaix porphyreolopha Smith.

Iris brown; bill and legs black.

The Crimson-winged Plantain-eater was local, but not uncommon at some of our camps. It was always met with in the larger trees, and I often heard its loud notes without seeing the bird. It was one of the most striking species that I met with; and one of the prettiest natural-history sights I saw in East Africa was when on one occasion I watched four of them playing together in a large tree: for fully twenty minutes they chased each other, jumping from bough to bough, flirting their tails, expanding their wings, and shewing the rich crimson feathers; all the time uttering a low, not unpleasant call-note. A party of Masai natives I met had some of their arrows adorned with the crimson primaries of this species.

147. Schizorhis leucogaster. White-bellied Plantain-eater.

Schizorhis leucogaster (Rüpp.).

The White-bellied Plantain-eater was more commonly distributed than the last species, and it was noticed almost wherever we went, provided the country was sufficiently forest-like to contain large trees, amongst which the birds live, feeding on fruit and berries. Contrary to what most writers have said, I almost always found them singly and not in small flocks; in fact, I never saw more than three together at a time. When sitting on a bough they keep continually raising and lowering their crest, but owing to their grey colour are very difficult to see.

148. Strix poensis. African Barn-Owl.

Strix poensis Fraser.

Iris black; bill whitish yellow; claws dark grey.

The only pair of Barn-Owls seen in East Africa were a pair which were shot out of a small cave at Bondoni.

149. PHASMOPTYNX CAPENSIS. African Short-eared Owl.

Phasmoptynx capensis Kaup.

Bill and claws very dark grey.

On the Kauti Plains this Short-eared Owl was rather common, and we used to put it up out of the thin grass when riding or walking across the flats; it was never seen perching on a tree. We did not find this species anywhere else.

150. BUBO LACTEUS. Verreaux's Eagle-Owl.

Bubo lacteus Temm.

Iris brown; bill light greenish-grey; feet white.

Verreaux's Eagle-Owl was not uncommon, and generally seen by the sides of rivers amongst the tall trees. One day we saw three Egyptian Kites mobbing one in a tree.

151. BUBO CINERACEUS. Cineraceous Eagle-Owl.

Bubo cineraceus Guér.

Bill and claws black.

This species was very common in the thickly wooded dongas round Theki. I put five out of one small tree.

152. SCOPS CAPENSIS. Cape Scops Owl.

Scops capensis Smith.

Iris bright yellow; bill light grey; claws dark grey.

This species was only seen once. A female was shot, sitting on the exposed bough of a tree in broad sunlight, near the Athi River, on February 3rd. It was very small, and I hoped would prove to be *Scops ugandæ*; however, it was *S. capensis*, and was the only example of the species which we got.

153. FALCO BIARMICUS. African Lanner.

Falco biarmicus Temm.

Iris light brown; bill yellow at base, tip blue; feet yellow.

The African Lanner was not uncommon, but very shy, and seldom came within gunshot. Three examples were obtained at Kallima Theki: two old males and an immature female.

154. FALCO CUVIERI. Cuvier's Falcon.

Falco cuvieri Smith.

Iris brown; bill dark slate-coloured; legs yellow.

Cuvier's Falcon was decidedly rare. A female was shot as it flew high over the Hotel garden at Nairobi, but the species was never seen again.

155. TINNUNCULUS ALAUDARIUS. Common Kestrel.

Tinnunculus alaudarius Linn.

Not at all common in my experience, and only obtained at Naivasha.

156. TINNUNCULUS CENCHRIS. Lesser Kestrel.

Tinnunculus cenchris Naumann.

Iris dark brown; bill light blue, yellow at base, tip black; feet yellow.

Great numbers of Lesser Kestrels were attracted by a large prairie fire which broke out near our camp on the Kauti Plains, and it was extraordinary to watch them flying repeatedly through the dense clouds of smoke right into the flames in order to catch the insects. They were common elsewhere.

157. HALIAËTUS VOCIFER. Vociferous Sea-Eagle.

Haliaëtus vocifer (Daud.).

Iris yellow-brown; bill black, yellow at base; legs whitish-yellow.

The Vociferous Sea-Eagle was common at Naivasha, and was also constantly seen perched on the tops of tall trees by rivers. A nest which I believe to have belonged to this species was passed one day near the Thika. I had no opportunity of getting up to it, but from below it appeared a very large structure.

158. HELOTARSUS ECAUDATUS. Bateleur Eagle.

Helotarsus ecaudatus Gray.

Bill black; iris brown; feet coral-red.

Not uncommon near Kallima Theki.

159. Buteo augur. Augur Buzzard.

Buteo augur Rüpp.

Iris brown; cere yellow; bill black, yellow at base; legs whitish-yellow.

A common species, but, like all the larger Hawks, of extreme wariness. A pair were breeding in a cleft in one of the precipices on the far side of Longonot.

160. Milvus ægyptius. Yellow-billed Kite.

Milvus ægyptius (Gmel.).

Iris hazel; bill and legs yellow.

Contrary to the habits of all the other Hawks, this Kite, which was very common, was extraordinarily tame. At several of our camps on the Athi it was always soaring round or sitting on the trees near, and would even fly down to where Mr. Groves was skinning birds and pick up bits of meat at his feet.

161. Milvus migrans. Black Kite.

Milvus migrans Strickl.

Iris pale greyish-yellow; bill black, yellowish at base; feet yellow.

Certainly not obtained often, and, I think, not seen very frequently. It appeared to me to be rather rare.

162. Elanus cæruleus. Black-shouldered Kite.

Elanus cæruleus (Desf.).

Iris crimson; bill black, yellow at base; legs yellow.

Obtained at Naivasha and Kallima Theki. At the latter place it was fairly common, and two or three might often be seen sitting on the top of a tree, from which they would keep a sharp look-out all round. It was not particularly shy, and it was generally easy to get within gunshot. An individual which I tipped in the wing and kept alive for some weeks preferred insects and grasshoppers for food to birds or mice.

163. Circus æruginosus. Marsh-Harrier.

Circus æruginosus Savign.

Iris yellow; feet yellow; claws black.

The Marsh-Harrier was very common at Lake Naivasha.

164. CIRCUS MACRURUS. Pallid Harrier.

Circus macrurus (S. G. Gm.).

Iris brown ; bill black ; legs yellow.

The Pallid Harrier was not infrequently seen hawking over the plains of Theki ; it was also obtained on the Kauti Plains, and is probably distributed all over East Africa.

165. CIRCUS CINERACEUS. Montagu's Harrier.

Circus cineraceus Cuv.

Iris hazel ; bill black ; legs yellow.

A common species everywhere.

166. CIRCUS RANIVORUS. Le Vaillant's Harrier.

Circus ranivorus Cuv.

Iris yellow ; feet light yellow.

Le Vaillant's Harrier was not often seen, and was rather a rare bird. A female was shot flying along a stream on the Athi Plains late one evening. The stomach contained the remains of a half-digested lizard.

167. NEOPHRON MONACHUS. Eared Vulture.

Neophron monachus Jard. & Selby.

Iris dark brown ; bill horn-coloured, greenish black at base ; feet grey-blue.

168. PHALACROCORAX LUCIDUS. South-African Cormorant.

Phalacrocorax lucidus (Licht.).

Iris green ; bill yellow and black ; legs black.

This species was very common at Lake Naivasha, and was breeding among the branches of some partly submerged trees a mile or so out in the Lake. I rowed out to this "rookery" one day, and found about sixty nests containing eggs and young birds in all stages of growth, from nestlings a day old to big feathered young ones which flopped out of the nests into the water at my approach and immediately dived. The nests were large structures of sticks, and were slightly lined with a few feathers ; none of them contained more than two young, though one had three eggs. A slight "bottom" of grass and weeds had formed amongst the trees, and I was able to get out of the boat and climb about amongst the nests. When I did so, the old Cormorants flew anxiously overhead and the young birds "cawed" loudly, while a flock of eight or ten White Egrets and some Ibises kept hovering near, furious at the invasion of their sanctuary. I believe that it has never been satisfactorily determined whether there are any fishes or not in Naivasha: none of the fish-eating birds which I shot there—*i.e.*, Herons, Cormorants, Kingfishers, and Pelicans—ever contained fishes in their stomachs, but remains of frogs, four or five species of which are very common in the Lake; and though I looked most carefully, and tried with nets and lines, I never could catch or see any sign of fish; and yet it seems inconceivable that such vast numbers of large birds should subsist entirely on frogs, neither does it seem likely that they go to another place for their food. My idea is that the fish keep to the deep pools in the middle of the lake, and so are seldom seen, and that therefore it is supposed that there are none; but it seems strange that none of the inhabitants of the locality should ever have seen one, dead or alive.

169. PLOTUS LEVAILLANTI. African Darter.

Plotus levaillanti Licht.

Iris brown; bill dusky brown; legs black.

Darters were common on the Athi and the Thika, and I had many opportunities of watching these most quaint birds. Their habit of sitting on a rock with wings extended, basking in the sun, is well known; but sometimes they lie flat down on their breasts with wings spread out, as if to get still more sun. Their flight is rather strong and very rapid; and I think that they feed almost entirely by night. On one occasion, while watching an individual sitting on a sloping rock in the river, I was much amused to see a large turtle crawl up on to the stone and, with head and neck stretched out, look most comically at the apparently unsuspecting Darter; gaining confidence, it advanced further, and literally pushed the unoffending bird off.

170. Pelecanus onocrotalus. White Pelican.

Pelecanus onocrotalus Gmel.

Iris deep hazel-red; base of upper and lower mandible deep slate-coloured; sides of upper mandible light yellow with streaks of red, edge bright red, tip coral-red; pouch gamboge-yellow.

There were two or three large flocks of this Pelican on Lake Naivasha. They were extremely wary and shy, but, by hiding up in the thick papyrus-reeds near a sandbank on which they sat, I was able to bag one with a rifle. Every evening they would soar in a long straggling line to an immense height in the air. The pouch and stomach of the one which I shot were empty.

There was another smaller species of Pelican on the lake and some Flamingos: but I was not able to shoot specimens of either of them, and could not determine to what species they belonged.

171. Leptoptilus crumeniferus. African Marabout.

Leptoptilus crumeniferus Lath.

Bill dirty green; legs black.

It was always a source of interest to me to watch the Marabouts assembling when I had shot a beast. The first tiny black specks which appeared in the sky would generally turn out to be these great Storks; the Vultures came later. And then, again, in the evening we watched them standing like sentinels on the tops of the trees, gazing at the now whitened skeleton beneath them. The settlers shoot numbers of them for the sake of their feathers.

172. Scopus umbretta. Hammerhead Stork.

Scopus umbretta (Gmel.).

Iris brown; bill and legs black.

A nest of this species, which we found in a small mimosa-tree at Kallima Theki, was an immense structure of sticks, measuring very nearly six feet across. Several of the Hammerheads that I shot contained in their stomachs small spotted frogs.

173. Ardea purpurea. Purple Heron.

Ardea purpurea Linn.

174. **Ardea melanocephala.** Black-necked Heron.

Ardea melanocephala Shelley.

Iris yellow; bill black, lower mandible yellow-green; legs greenish-brown.

The Black-necked Heron was common at Naivasha.

175. **Ardea ralloides.** Squacco Heron.

Ardea ralloides Reichen.

Iris yellow; bill yellowish; legs dark green.

176. **Nycticorax griseus.** Night-Heron.

Nycticorax griseus L.

The Night-Heron was not seen at Naivasha, but was obtained on a small stream near the Athi.

177. **Ardea pusilla.** Red-necked Little Bittern.

Ardea pusilla Vieill.

Iris yellow; upper mandible black, lower mandible greenish; legs greenish-yellow.

This species is probably commoner than might be supposed, but owing to its skulking habits it is seldom seen. A female was shot at a small pool on the Athi Plains on Feb. 14th.

178. **Herodias alba.** Great White Heron.

Herodias alba Gray.

Iris yellow; bill yellow; legs greenish.

179. **Mesophoyx brachyrhyncha.** Little Egret.

Mesophoyx brachyrhyncha Sharpe.

The Little Egret was very common at Naivasha.

180. **Bubulcus lucidus.** Buff-backed Heron.

Bubulcus lucidus (Rafinesque).

Iris yellow; bill yellowish; legs dark green.

181. **Butorides atricapillus.** African Black-headed Heron.

Butorides atricapillus (Afz.).

Iris yellow; upper mandible black, lower yellow-green; legs yellow and brown.

This little Heron was not uncommon on the small streams near Kallima Theki, perching on the projecting roots of a tree under the river's bank, always shy and shunning observation. My great wish to bring examples of this species alive to England was not realized; the only individual that I obtained alive died in a very few days.

182. IBIS ÆTHIOPICA. Sacred Ibis.
Ibis æthiopica (Lath.).
Iris red-brown; bill and legs black.
The commonest species of Ibis at Naivasha.

183. HAGEDASHIA HAGEDASH. Hadadah Ibis.
Hagedashia hagedash Shelley.

Iris brown; upper mandible red along the top ridge, remainder and lower mandible dusky green.

We saw small parties of the Hadadah Ibis standing and feeding among the sandbanks on the Thika River. A number roosted in some tall trees near one of our camps and would return regularly each evening nearly at the same time from their feeding-grounds and with a great deal of noise settle themselves on their favourite perches for the night.

184. PLEGADIS FALCINELLUS. Glossy Ibis.
Plegadis falcinellus (Linn.).

The Glossy Ibis was common at Lake Naivasha, but was observed nowhere else.

185. PLATALEA ALBA. African Spoonbill.
Platalea alba Scop.

Iris black; bill and skin in front of face rosy-pink.

A single specimen of the African Spoonbill was shot as it flew over my head at Naivasha; it was not at all common and I never saw another on the Lake.

186. PLECTROPTERUS GAMBENSIS. Spur-winged Goose.
Plectropterus gambensis Steph.

Iris brown; bill pinkish; legs dusky pink.

The Spur-winged Goose was shot on the Athi and large numbers were seen at Naivasha. Its flesh is coarse and tasteless.

187. Sarcidiornis africana. Knob-billed Duck.
Sarcidiornis africana Strickl.
Iris dark brown ; legs and feet dark plumbeous.

188. Chenalopex ægyptiaca. Egyptian Goose.
Chenalopex ægyptiaca (Linn.).
Iris yellow-brown ; bill purplish-pink ; legs light pink.

189. Anas undulata. Yellow-billed Teal.
Anas undulata Dubois.
Iris brown ; bill yellow, patch on culmen black ; legs black.

The commonest Duck wherever we went in East Africa and excellent for eating.

190. Querquedula circia. Garganey.
Querquedula circia (Linn.).
Iris brown ; bill slate-coloured ; legs dusky.

191. Querquedula hottentotta. Hottentot Teal.
Querquedula hottentotta Smith.
Bill dark slate-blue ; legs black.

192. Pœcilonetta erythrorhyncha. Crimson-billed Duck.
Pœcilonetta erythrorhyncha (Gmel.).
Iris brown ; bill purplish-pink ; legs black.

A fairly plentiful species at Naivasha.

193. Thalassornis leuconotus. White-backed Duck.
Thalassornis leuconotus Eyt.
Iris dark brown ; bill dusky ; legs black.

The White-backed Duck was comparatively scarce at Naivasha when I was there, and was very shy and difficult to approach ; only two specimens were obtained.

194. Columba guinea. South-African Speckled Pigeon.
Columba guinea Salvad.
Iris orange ; bill black ; legs light red.

195. Turtur lugens. Red-eyed Turtle-Dove.
Turtur lugens (Rüpp.).

The Red-eyed Turtle-Dove was obtained at Kapiti, but was not at all common. We always met with it in very dense scrub, where it was hard to see, as it was shy and quickly disappeared from view.

196. TURTUR DAMARENSIS. Damara Turtle-Dove.

Turtur damarensis Finsch.

Iris orange-brown; bill black; legs reddish.

197. CHALCOPELIA CHALCOSPILOS. Emerald-spotted Wood-Dove.

Chalcopelia chalcospilos Bp.

Iris brown; bill and legs dull red.

The Emerald-spotted Wood-Dove was not uncommon, generally near water, amongst thick forest bush.

198. PTEROCLES GUTTURALIS. Yellow-throated Sand-Grouse.

Pterocles gutturalis Smith.

Iris brown; bill and legs dark grey.

The large packs of Yellow-throated Sand-Grouse which frequented the Kapiti Plains were generally tame and allowed me to approach quite close before they got up, when they would fly a very short distance and settle again. On the Athi Plains and all along the Athi River, where no doubt they have been much shot at, they were unapproachable and wild.

199. FRANCOLINUS HILDEBRANDTI. Hildebrandt's Francolin.

Francolinus hildebrandti Cab.

Iris brown; upper mandible dusky brown, lower mandible red; feet coral-red.

Hildebrandt's Francolin was only obtained on the west side of Lake Naivasha amongst the thick scrub and rocks. It was a very shy bird and difficult to obtain, but is probably not very uncommon there, though, owing to the difficulty of flushing it, it is seldom seen. Like all the Francolins, it is a tremendous runner and trusts to its legs to escape observation.

200. Francolinus uluensis. Ulu Francolin.

Francolinus uluensis Grant.

Iris brown; legs yellow.

This was the commonest of the Francolins at Kallima Theki, and reminded me very much of the English Partridge. It lives in small coveys among the long grass in the dry dongas and ravines and squats very close. One, which a native brought me alive, after three weeks of captivity, was still so wild that I could do nothing with it and had to let it go. The birds are excellent eating.

201. Francolinus schuetti. Schuett's Francolin.

Francolinus schuetti Fischer.

Iris brown; bill and legs bright orange.

A single specimen of Schuett's Francolin was obtained amongst thick bush at Kapiti. It was perching on the bough of a small tree. The species was not seen again.

202. Pternistes infuscatus. Cabanis's Bare-throated Francolin.

Pternistes infuscatus Cab.

Iris brown; bill dark brown; throat and face deep red, neck yellow; feet very dark brown.

Cabanis's Bare-throated Francolin was rather scarce by the Athi River, but at Kallima Theki it was common, and was seen in company with *F. uluensis.*

203. Numida reichenowi. Common Helmeted Guinea-fowl.

204. Turnix hottentotta. South-African Hemipode.

Turnix hottentotta Layard.

A fairly common species, but very seldom seen, owing to the great difficulty of making it fly, for if once flushed it is almost impossible to make it take to flight again. On January 30th I walked over an old bird, which immediately fluttered off with an apparently broken wing. After a few moments' search I found a nest containing four young ones, which at once scattered in all directions. The nest was a very slight depression in the ground, merely lined with some dead pieces of grass. The chicks were exactly like young Quails, and could not have been hatched more than a couple of days.

205. LIMNOCORAX NIGER. Black Rail.

Limnocorax niger (Gmel.).

Iris red; bill yellow-green; legs coral-red.

The Black Rail was very common at Naivasha, and was also obtained in a small stream at Bondoni. It is a charming little bird, easily tamed. I kept one, which had been snared by a native, alive for nearly two months, but lost it on the voyage home.

206. GALLINULA CHLOROPUS. Water-hen.

Gallinula chloropus Lath.

207. PORPHYRIO SMARAGDONOTUS. Green-backed Purple Gallinule.

Porphyrio smaragdonotus (Temm.).

Very plentiful at Naivasha. I caught three in tiny rat-traps baited with bits of meat, and brought one alive to England.

208. FULICA CRISTATA. Crested Coot.

Fulica cristata Gmel.

Iris red; bill slaty-blue; top of head bluish, comb red-brown; legs bluish-black.

Immense numbers of Crested Coots live in the thick belts of papyrus round Lake Naivasha.

209. BALEARICA GIBBERICEPS. Crowned Crane.

Balearica gibbericeps Reichen.

210. OTIS CÆRULESCENS. Blue-necked Bustard.

Otis cærulescens Vieill.

Iris yellow-brown; upper mandible dark brown, lower mandible yellow; legs yellowish-white.

All round Kallima Theki the Blue-necked Bustards were common in parties of four or five. They are difficult birds to flush, as they continually keep running on ahead, carrying themselves very low in the grass and hoping thus to escape observation: they always rise singly and when they get up utter a harsh note, which sounds like "kuk-pa-wow," repeating it several times as they fly away.

211. Lissotis melanogaster. Black-bellied Bustard.

Lissotis melanogaster Reichen.

Upper mandible slate-coloured, lower mandible yellowish; legs yellowish-white.

The Black-bellied Bustard was common from the Athi River across the Kauti Plains to the Thika River, but was not seen at Naivasha or at Kallima Theki.

212. Eupodotis kori. The Kori Bustard or Paauw.

Eupodotis kori Burch.

More oftener seen than shot, the Paauw was always shy: occasionally a well-placed bullet would lay one low. The flesh is very coarse and unpalatable.

213. Œdicnemus capensis. South-African Thick-knee.

Œdicnemus capensis Reichen.

Iris yellow; bill black, yellow at base; legs light yellow.

A fairly common species at Theki, where one day I found a single young one squatting by itself in the middle of the sandy plain: both old birds, which had evidently run ahead, got up about fifty yards away, but though I searched most carefully I could find no traces of the other young ones.

214. Œdicnemus vermiculatus. Vermiculated Thick-knee.

Œdicnemus vermiculatus Cab.

Iris yellow; bill black; feet pale green.

215. Cursorius chalcopterus. Bronze-winged Courser.

Cursorius chalcopterus Reichen.

Iris brown; bill black; legs whitish pink.

Three of these rare Coursers were seen on April 12th near the Gerei River and two were shot. They were the only individuals which I saw. Perhaps later, during the rainy season, they may be commoner.

216. Parra africana. African Jacana.

Parra africana Gmel.

Iris brown; bill of a blue-slate colour; forehead and crown pale blue; legs greenish slaty.

The large African Jacana was quite common at Naivasha and was always an interesting bird to watch. On the unfrequented and little-visited west side of the Lake it was extraordinarily tame, and on several occasions I lay in the boat with two or more Jacanas within four yards of me, quite unconscious of my presence, engrossed in walking about on the water-lily leaves, which they kept continually turning over with their beaks in search of insects. They fly readily and strongly, with their long legs held straight out behind them.

217. Parra capensis. Lesser African Jacana.

Parra capensis Smith.

Iris light hazel; bill yellowish brown; legs greenish brown.

A scarce bird, of which only one example was obtained at Lake Naivasha; it probably keeps rather apart from the large Jacanas. The one shot was running about on the water-lily leaves and was quite tame.

218. Hoplopterus spinosus. Spur-winged Plover.

Hoplopterus spinosus (Linn.).

Iris red; bill and legs black.

219. Stephanibyx coronatus. Crowned Lapwing.

Stephanibyx coronatus (Bodd.).

Iris yellow; bill black, red at base.

Not uncommon on the plains near Naivasha, but shy and difficult to approach. It is very noisy, and keeps in little flocks of three or four.

220. Ægialitis pecuaria. Kittlitz's Sand-Plover.

Ægialitis pecuaria Strickl.

Iris very dark brown; legs bluish black.

221. Oxyechus tricollaris. Treble-collared Sand-Plover.

Oxyechus tricollaris (Vieill.).

Iris brown, eyelids scarlet; bill bluish-black; feet yellowish.

The Treble-collared Sand-Plover was mostly found in small rivers and streams, generally singly or in pairs.

222. Ochthodromus asiaticus. Asiatic Dotterel.

Ochthodromus asiaticus (Pall.).

Iris brown; bill black; legs greenish grey.

The Asiatic Dotterel was very common and generally seen in large flocks. Unless it had been previously fired at, it was extraordinarily tame. Nine were killed with one shot out of a flock sitting on the ground. I kept some individuals of this species in captivity for several weeks, but was doubtful if I could bring them home, owing to their requiring such an enormous quantity of live insects; they would not touch anything else, but greedily devoured as many grasshoppers and beetles as I could give them.

223. Himantopus himantopus. Black-winged Stilt.

Himantopus himantopus (Linn.).

Iris red; bill black; legs pinkish.

224. Totanus stagnatilis. Marsh-Sandpiper.

Totanus stagnatilis (Bechst.).

Iris brown; bill black; legs dull greenish.

Common at Naivasha.

225. Tringoides hypoleucus. Common Sandpiper.

Tringoides hypoleucus (Linn.).

Common on all the rivers and streams, but not observed at Naivasha.

226. Rhyacophilus glareola. Wood-Sandpiper.

Rhyacophilus glareola (Licht.).

Iris brown; bill black; legs blackish-green.

227. Gallinago gallinago. Common Snipe.

Gallinago gallinago (Licht.).

A single specimen of the Common Snipe was shot at Naivasha.

228. GALLINAGO NIGRIPENNIS. Black-quilled Snipe.

Gallinago nigropennis Bp.

Bill dark brown; legs greenish black.

The Black-quilled Snipe was very common at Lake Naivasha.

229. LARUS PHÆOCEPHALUS. Grey-headed Gull.

Larus phæocephalus Hartl.

Bill and legs crimson.

The Grey-headed Gulls were often seen flying over Lake Naivasha, and I believe that a pair were breeding in a small swamp; but though I made a careful search, I could find neither eggs nor young. The exquisite roseate colour on the breast of this species fades quickly after it has been shot.

230. PODICIPES CRISTATUS. Great Crested Grebe.

Podiceps cristatus L.

Iris red.

231. PODICIPES CAPENSIS. African Little Grebe.

Podiceps capensis Licht.

Iris brown; bill and legs black.

The African Little Grebe and the Great Crested Grebe were both common on Lake Naivasha.

XXVI.—*Proceedings at the Annual General Meeting of the British Ornithologists' Union*, 1909.

THE Annual General Meeting of the British Ornithologists' Union for this year was held at the house of the Zoological Society of London, 3 Hanover Square (by permission), on May 26th. The Chair was taken by the President, Dr. F. DuCane Godman, F.R.S.

The minutes of the meetings held on December 9th and 10th, 1908, were read and confirmed.

The following new Rule, which had been unanimously passed at the Special General Meeting held on December 10th, 1908, was submitted to the Meeting and confirmed:—

"If, in the opinion of the Committee, any Member shall have acted in a manner injurious to the interests or good name of the Union, or shall have personally assisted in or connived at the capture or destruction of any bird, nest, or eggs in the British Isles, by purchase or otherwise, likely, in the opinion of the Committee, to lead to the extermination or serious diminution of that species as a British bird, the Secretary shall be directed to send a registered letter to that Member, stating the facts brought before the Committee and asking for an explanation of the same, but without mentioning the source from which such information was obtained. After allowing a reasonable time (not less than a clear fortnight after the receipt of the Secretary's letter) for reply or for appearing in person before the Committee if he so desire, the Committee, providing not less than four are agreed, shall have power to remove that gentleman's name from the List of Members without assigning any reason. Such Member may, if he so desire, stand for re-election by ballot at the next Annual General Meeting, and in the event of his re-election no fee for re-admission shall be required."

The Report of the Committee, which was then read, announced the continued prosperity of the Union during the past year, both as regards its membership and its finances. The Annual Volume of 'The Ibis' for 1908 (the fiftieth of the whole and the second of the Ninth Series) had been edited by Dr. P. L. Sclater, D.Sc., F.R.S., and Mr. A. H. Evans, M.A. It contained 660 pages and was illustrated with 10 coloured plates, 3 maps, and 7 text-figures.

With much regret the Committee reported the deaths of the following Members since the last Annual Meeting:—

Prof. Barboza du Bocage, Col. Hanbury Barclay, Col. C. T. Bingham, S. G. Buxton, E. N. F. Fenwick, W. H. Hudleston, and William Mitchell.

The following gentlemen had resigned, viz., J. H. Allchin, F. R. S. Balfour, R. J. Colman, Rev. A. G. G. Cowie, A. K. Haagner, W. H. Hudson, Rev. W. K. Martin, A. I. Simey, and W. B. Tegetmeier; and the names of C. B. Cory and J. C. Hartland had been removed from the List of Members under Rule 6.

At the date of the Meeting the Union consisted of 422 Ordinary Members, 2 Extra-Ordinary, 10 Honorary, 8 Colonial, and 19 Foreign Members.

The Committee further reported that a Special Meeting in commemoration of the Jubilee of the Founding of the Union had been held on December 9th, 1908. Gold Medals, struck to commemorate the occasion, had been presented to four surviving Original Members, Dr. F. Du Cane Godman, Dr. P. L. Sclater, Percy S. Godman, Esq., and Wilfrid H. Hudleston, Esq. It was proposed that similar Medals should be occasionally given in recognition of any special work in ornithology. One of the Medals had also been presented to the National Collection of Medals in the British Museum. The Jubilee Supplement to 'The Ibis' for 1908, issued in March last, had completed the Jubilee Commemoration.

It had also been decided at the Jubilee Meeting that an ornithological expedition, which was shortly going out to explore Central New Guinea, should be undertaken under the auspices of the Union.

The Statement of Accounts for the year ending December 31st, 1908, was then submitted and approved, and a vote of thanks was accorded to Mr. Edward Bidwell, the Auditor.

Dr. F. G. Penrose and Mr. Edward Bidwell having been appointed Scrutineers to superintend the ballot, the Meeting proceeded to elect the Officers for the ensuing year, and on the conclusion of the ballot it was announced that Dr. F. DuCane Godman, F.R.S., had been re-elected President, and Mr. J. Lewis Bonhote, M.A., F.L.S., Secretary; also that Mr. D. Seth-Smith had been elected a Member of the Committee in the place of Mr. Frederick Gillett, who had retire by rotation.

The following 17 gentlemen were then balloted for and elected Ordinary Members of the Union:—Thomas H. Briggs, M.A., F.E.S., Rock House, Lynmouth, N. Devon; David C.

Campbell, J.P., Templemore Park, Londonderry; C. I. Carroll, Rocklow, Fethard, Co. Tipperary; Lieut. William M. Congreve, R.G.A., Breinton House, Hereford; Capt. Alfred Delmé-Radcliffe (Indian Army), Satara, Deccan, India; Capt. Richard Fanshawe (late Scots Guards), Admiralty House, Portsmouth; William E. Frost, J.P., Ardvreck, Crieff, Perthshire; Claude H. B. Grant, F.Z.S., 30 Wimbledon Park Road, West Hill, Wimbledon; the Rt. Hon. Sir Edward Grey, Bt., P.C., M.P., F.Z.S., Falleden, Christon Bank, R.S.O., Northumberland; Staff-Surgeon Kenneth H. Jones, M.B., Ch.B., R.N., Royal Naval Barracks, Portsmouth; George H. Lings, Barcicroft, Burnage, Didsbury, Manchester; Norman D. Macnaghten, Ministry of the Interior, Cairo, Egypt; the Rev. Ernest U. Savage, 129 Upper Canning Street, Liverpool; Malcolm C. C. Seton, 13 Clarendon Road, Holland Park, W.; Lieut. W. P. C. Tenison, R.F.A., 62nd Battery R.F.A., Nowshera, N.W.F.P., India; Henry L. White, Belltrees, Scone, New South Wales; Richard B. Woosnam, Pendell Court Farm, Bletchingley, Surrey.

Mr. W. B. Tegetmeier was elected an Extra-Ordinary Member, Mr. Alwin K. Haagner, a Colonial Member, and Mons. Sergius N. Alphéraky a Foreign Member of the Union.

The following proposed additions to the Rules were then submitted to the Meeting:—

Rule 2.

After "Ordinary Members" in line 1, add "Lady Members."

After line 5, insert: "Lady Members shall be ladies qualified by special ornithological knowledge, and shall not exceed five in number."

Rule 3.

After "vote" in line 4, add "Lady Members."

After a short discussion the following two motions were put and carried, and the Secretary was instructed to amend the Rules accordingly:—

(1) Proposed by Mr. H. J. Elwes, and seconded by Mr. A. H. Evans :—

> "That Ladies, qualified by special ornithological knowledge, be admitted as Honorary Members."

(2) Proposed by Dr. F. G. Penrose, and seconded by Mr. E. Bidwell :—

> "That the number of such Lady Members be limited to ten, as in the case of male Honorary Members."

A vote of thanks to the Zoological Society of London for the use of their rooms was unanimously passed and the Meeting adjourned.

After the Meeting the joint Dinner of the British Ornithologists' Union and the British Ornithologists' Club was held at Pagani's Restaurant, Great Portland Street, and attended by the Members and their Guests.

XXVII.—*Notices of recent Ornithological Publications.*

[Continued from p. 383.]

51. *Bangs on some Colombian and Costa Rican Birds.*

[(1) Notes on Birds from Western Colombia. Proc. Biol. Soc. Washington, vol xxi. p. 157.

(2) A new Tyrant-bird from the Santa Marta Region of Colombia. *T. c.* p. 163.

(3) Notes on some rare or not well-known Costa Rican Birds. *Op. cit.* xxii. p. 29.]

Mr. Bangs, who is always hard at work on Colombian and Central American Birds, sends us separate copies of three papers which he has recently published. The first relates to a collection made "just south of Darien," which contained examples of 110 species and subspecies. Thirteen forms are specified as being of special interest, amongst which are two rare Tanagers—*Chlorochrysa nitidissima* and *Iridornis porphyrocephala*. The following species and subspecies are described as new :—*Aulacorhamphus petax, Basileuterus* *melanotis dædalus*, *Dacnis venusta fuliginata*, *Calospiza gyroloides deleticia*, and *Atlapetes crassus*. In the second paper *Rhynchocyclus sulphurescens exortivus* from Santa Marta is characterized as a new subspecies. In the third paper new and rare species are noted or described from some collections recently made in Costa Rica by Mr. F. Underwood. The novelties are called *Trogon melanocephalus illætabilis* and *Aimophila rufescens hypæthrus*.

52. *Bryan on Birds from Molokai* (*Hawaiian Islands*).

[Some Birds of Molokai. By Wm. Alanson Bryan, formerly Curator of Ornithology and Taxidermist in the Bishop Museum. Occ. Pap. Bishop Mus. vol. iv. no. 2. Honolulu, 1908.]

With a view of obtaining materials for the series of Hawaiian bird-groups in the "Bishop Museum," Honolulu, Mr. Bryan spent two months (April 15th to June 15th, 1907) in the mountains of Molokai. His main object was to get specimens of the "Black Mamo" (*Drepanorhamphus funereus*)—"one of the rarest of living birds," but other species were not neglected, and a good series of field-notes was likewise put together.

Mr. Bryan gives us a graphic account of his struggles to secure specimens of the much wished for bird. Several previous explorers had failed in doing so, and it was generally supposed that the species was quite extinct. From his various camps on the mountains of Molokai, Mr. Bryan searched the wet bog-forests, which are drenched by almost continuous rain, for many weeks in vain. At length, when he and his guide were cutting their way through a particularly dense and unpromising jungle, they heard "a clear, gentle, even whistle, Ho-a," uttered by some bird not fifty yards away. Mr. Bryan began to imitate the call as well as he could, and the curious black bird with its wonderfully curved bill flew down, and perched in a tree within ten feet of him. Thus the first specimen was obtained, though it was most difficult, when shot, to find it in the dense herbage. Two fine adult male individuals were subsequently procured in the same district.

Besides describing his adventures in searching for the "Hoa" or "Black Mano," Mr. Bryan supplies us with many interesting field-notes on other birds met with during his two months' exploration of the damp forests of Molokai. The *Phæornis* of this island, of which a good series was obtained, proves to be a different representative species of this peculiar genus, and is described as new under the name of *Phæornis ritha*. Mr. Bryan was also so fortunate as to discover a large colony of one of the Petrels of the genus *Œstrelata* (*Œ. sandwichensis*), which, after the manner of its fellows, breeds in holes on the cliffs of Molokai at an elevation of from 3500 to 4000 feet. He accompanied a party of native bird-catchers, who visit the cliffs every breeding-season to obtain the young birds, which are regarded as a "special delicacy by all Hawaiians." This Petrel has been hitherto regarded as a great rarity, but appears to be still abundant in this locality. On the present occasion twenty-one examples were obtained, but their numbers are said to be fast decreasing owing to the ravages of the Mongoose, which has been unfortunately introduced into the island and has destroyed many of the ground-frequenting birds.

53. *Bulletin of the British Ornithologists' Club.*

[Bulletin of the British Ornithologists' Club. Vol. xxii. Report on the Immigrations of Summer Residents in the Spring of 1907: also Notes on the Migratory Movements during the Autumn of 1906. London: October 1908. Price 6s.]

As will be seen from the title, this Report differs from those of former years in containing notes referring to the Autumn Migration, which were received from a limited number of observers, while it is proposed to augment this section considerably in the immediate future. The details of the movements observed at the lighthouses are given separately, and might perhaps have been accompanied by a map of the stations.

We have read the report carefully and find no special points to discuss, though our attention is called to the fact that there were no very great "rushes" of migrants in this wet cold spring, and that the height of the migration was from April 15th to May 20th. It seems, however, that the lists of species arriving on the different parts of the coasts (p. 11) need reconsideration; for instance, the Ring-Ouzel is entered as arriving *solely* on the western half of the south coast, while on p. 37 that species is reported from the Spurn Head Lighthouse and from Norfolk. The meaning may be that on the *south coast* the bird only arrives on the western half; but in that case the wording should be clearer.

54. *Carriker on Costa Rican Formicariidæ.*

[Notes on Costa Rican Formicariidæ. By M. A. Carriker, jun. Ann. Carn. Mus. v. no. 1 (1908).]

In going through the series of Formicariidæ in the Carnegie Museum at Pittsburg Mr. M. A. Carriker has made several discoveries relating to the specimens collected in Costa Rica by himself in the years from 1902 to 1907. These relate to *Cercomacra tyrannina* and the subspecies named by Mr. Bangs *C. crepera,* which neither Mr. Carriker nor Mr. Ridgway seems to consider valid; to *Drymophila stictoptera* Lawrence, which is regarded as the male of *D. læmosticta* Salvin; and to *Myrmelastes immaculata occidentalis* Cherrie, and its rank, which Mr. Carriker considers should be specific and not subspecific.

55. *Chapman's "Habitat" Bird-Groups.*

[The Habitat Groups of North-American Birds in the American Museum of Natural History. By Frank M. Chapman, Curator of Ornithology. Guide Leaflet, Series no. 28. February 1909.]

At South Kensington, as we all know, the plan adopted for the exhibition of the select mounted specimens of birds is to place examples of each species with the nests, eggs, and other appurtenances in a separate case. In the American Museum of Natural History at New York a somewhat different arrangement is pursued. The groups of birds, which are placed in a Hall by themselves, are designed to illustrate not only the postures and habits, but also the haunts of the different species. Besides the specimens themselves (male, female, nest, eggs, and young) a reproduction of from 60 to 160 square feet of the country surrounding each group is attempted. "To the accurate and realistic representation of the home of the species is added a painting, taken from nature, of its habitat, the real foreground being connected with the painted background in such a manner that one often does not at first see where the former ends and the latter begins. The whole therefore gives an adequate conception of the nature of the country which the birds inhabit, and the conditions under which they live."

The plan seems to be excellent, and, though we have never had the good fortune to see the "Habitat Bird-Groups," we are told by those who have inspected them that the scheme has been carried out in the most happy and efficient manner, and that the "Hall" of Bird-Groups is a most attractive sight.

The "leaflet" now before us contains a series of photographic reproductions of the "Bird-Groups," some twenty or more in number, while a map of North America" shews by dots the exact localities represented in them. They are distributed all over the Continent, from the Canadian Rockies to Arizona on the west, and from the St. Lawrence to the Bahamas on the east. Each picture has an explanatory sheet of letterpress attached to it, which contains the chief particulars of the scene in popular language.

While fully admitting the value and interest of Mr. Chapman's work, we, nevertheless, venture a small criticism on the name which he has given to it. "*Habitat*" is simply the third person singular of the verb "*habito*" and means "it dwells." Its frequent use as a substantive is, of course, well known to every naturalist, but it is not grammatical and its employment as a title in apposition to "Bird-Groups" seems to us to form rather an unhappy combination.

56. *Chapman on the Booby and Man-of-War Birds.*

[A Contribution to the Life-histories of the Booby (*Sula leucogastra*) and the Man-of-War Bird (*Fregata aquila*). By Frank M. Chapman. Extr. from Publ. 103, Carnegie Inst. of Washington, pp. 139-151 (1908).]

Mr. Chapman left Nassau, Bahamas, on March 31st, 1907, by the 'Physalia,' for Cay Verde, about 230 miles to the south-east, in order to procure "specimens, accessories, photographs and other data" to be used in preparing "habitat groups" of the Booby and Man-of-War Bird for the American Museum of Natural History at New York. Owing to unforeseen delays only three days and nights could be passed on Cay Verde; but so little has yet been recorded of the breeding-habits in the Bahamas of the two birds in question that it was thought that what was observed, even in this short period, would be worthy of description.

After an account of the exact situation and size of the little Cay, which lies on the eastern edge of the Columbus Bank, thirty miles east of Little Ragged Island, the author describes its bird-life, which consists mainly of numerous migrants on passage. No Land-birds appear to be resident. He then proceeds to his main subject—the Boobies and the Frigate-birds. It was estimated that about 1500 pairs of the former species and from 200 to 300 of the latter were nesting on Cay Verde. Of both the species most of the nests contained half-grown young, but none held fresh eggs, while a few birds of the year were already on the wing. The eggs of the Boobies were deposited in slight hollows on the ground, without any attempt at a nest, but the Man-of-War Birds placed their slight nests, made of twigs and sticks, in the tops of the sea-grapes at a height of six or seven feet, or among the cactuses within two feet of the earth.

The paper is well illustrated by photographs. It is pointed out that Cay Verde from its position and isolation would be an "admirable station" for the study of the migration of birds in that part of the world. To this we heartily agree and may add that there is still much to be done by an active ornithologist in the Bahamas, where the winter-climate is perfect and to which access is easy.

57. *Dresser on Palæarctic Birds' Eggs.*

[Eggs of the Birds of Europe, including all the Species inhabiting the Western Palæarctic Area. By H. E. Dresser. London. Parts XVII., XVIII. (April 1909).]

These parts of Mr. Dresser's work continue the Anatidæ and proceed to the Columbidæ, Pteroclidæ, Phasianidæ, and Tetraonidæ, with the addition of *Turnix sylvatica, Rallus aquaticus*, and *Porzana maruetta*. The plates include eggs of the Anatidæ, Pteroclidæ, *Tetrax*, *Œdicnemus*, the *Charadriidæ, Glareolidæ, Himantopus*, and *Recurvirostra*.

The letterpress calls for no special remarks and we may therefore devote our attention to the plates, which are exceptionally good. In former parts of the book the shadows of the eggs were not always successfully managed, but this difficulty seems now to have been entirely overcome, and we are presented with a series of specimens which stand out well and are very true to nature. In fact, in our opinion, no other representations of eggs have ever been quite so good. Even those of the Ducks shew the differences well, by no means an easy matter; those of the Sand-Grouse and Plover-tribe are beautiful, and the few remaining figures are well up to the mark. The examples are admirably chosen and often remarkable; in the case of the Oyster-catcher and Avocet alone should we like a more typical variety.

58. '*The Emu*,' 1908–1909.

[The Emu. A Quarterly Magazine to popularize the Study and Protection of Native Birds. Vol. viii. pts. 2–4 (Oct. 1908, Jan.–April 1909).]

Even in the wonderful land of Australia there is a limit to new discoveries, and comparatively few are recorded in these parts. In part 3, however, Mr. G. M. Mathews describes *Malurus dulcis*, sp. n., from the South Alligator River district in Arnheim Land. The specimen was sent by Mr. J. T. Tunney to the Tring Museum, where it was at first identified as *M. pulcherrimus*. Mr. A. J. Campbell in the same part proposes the name of *Pardalotus pallidus* for an apparently new form, and adds further information as to the habitat and breeding of *Pachycephala lanioides*, hitherto known from one example only. Similar information is given on *Collocalia francica.*

In part 2 Mr. D. Le Souef has an article on new or rare eggs belonging to thirteen Australian species, and Mr. T. Carter a note on the discovery of *Calamanthus montanellus.* Mr. A. H. Mattingley commences an article on the Mallee Fowl (*Lipoa ocellata*), which is continued in part 3. It is many years since we read so good a description of the nesting-habits of this bird, and the present account is exceptionally full and well illustrated. The great irregularity in the deposition of the eggs seems to be quite a new point. Mr. E. M. Cornwall follows with the second part of his Notes referring to Mackay, N. Queensland; and in part 4 Mr. F. L. Whitlock writes on the birds observed on the Pilbarra Goldfield, N.W. Australia.

Other papers are by Mr. Gibson (Abrolhos Islands); Dove (Essenden, Victoria); Stead (Black Cormorant in New Zealand); Cole (Cormorants in Victoria); Hill (Montague Island); Howe (N.W. Victoria); and Miss Fletcher (Cleveland, Tasmania). Mr. A. G. Campbell writes a monograph on the Flame-breasted Robin, and Mr. R. Hall gives notes on the migration of *Cypselus pacificus.*

There are a considerable number of illustrations in these three parts, and a graphic narrative is furnished by Capt. S. A. White of the A. O. U. Expedition to the islands of Bass Straits, while Mr. A. J. Campbell describes the simultaneous "camp-out" on Philip Island.

A sketch of a great forward movement in Bird-Protection is given in part 2, with which may be coupled the "Minutes of Conference of State Government Representatives on Bird-Protection" that follow in part 4.

59. *Flower and Nicoll on the Wild Birds of the Giza Gardens.*

[Zoological Gardens, Giza, near Cairo. Special Report No. 3. Wild Birds of the Giza Gardens, 1898–1908. By Stanley S. Flower and Michael J. Nicoll. Cairo, 1908. 8vo. 111 pp.]

On several previous occasions we have alluded to the various birds that resort more or less frequently to the

Zoological Gardens at Giza, near Cairo. In this report Captain Stanley Flower, with the assistance of Mr. Michael Nicoll, gives a list of the species that have been noticed there during the past ten years. As they belong, with but few exceptions, to the category of "British Birds," this list will be of considerable interest to the students of British Bird-life, as well as to ornithologists in general.

The Giza Gardens, which occupy an area of about 52 acres, are on the left bank of the Nile opposite Cairo, and are on the tramway which connects Cairo with the Pyramids. One of their chief attractions, after the Menagerie in its well-kept condition, is the number and variety of the wild birds to be observed there, especially during the vernal and autumnal periods of migration. Great pains have been taken to encourage and protect such birds in every way, and the result is that the occurrence of no less than 155 species has been recorded during the past ten years.

In order to identify the species more certainly the authors give references to Shelley's 'Birds of Egypt' and Saunders's 'Manual,' the two books most likely to be in the hands of the ornithologist who visits Egypt, while they generally follow Saunders's arrangement and nomenclature. At the beginning of the "List" many of our friends will be surprised to find the Blackbird (*Turdus merula*), the Song-Thrush (*T. musicus*), and the Robin (*Erithacus rubecula*) described as "regular winter-visitors." But such is undoubtedly, we believe, the case with these three birds, which in England many look upon as common and constant residents, although in many places the Song-Thrush decreases in numbers in the winter, especially when the weather is severe. On the other hand, the Rufous Warbler (*Aëdon galactodes*) and the Olivaceous Warbler (*Hypolais pallida*) are summer-visitors at Giza, arriving from the south in March and April and nesting in the Gardens. Among the species met with at Giza which are not recognised as Egyptian by Shelley are the Siskin (*Chrysomitris spinus*), the Blue Rock-Chat (*Myrmecocichla melanura*), a Nuthatch (*Sitta*) of some sort, the Red-breasted Flycatcher (*Muscicapa parva*), and the Levant

Sparrow-Hawk (*Accipiter brevipes*). The Pied Kingfisher (*Ceryle rudis*) is the dominant form of the Alcedinidæ in Egypt; on the 5th of May, 1902, twenty-four of these birds were counted in one part of the Giza Gardens. Our Cuckoo (*Cuculus canorus*) is a "regular visitor in small numbers, in spring and autumn," but has never been heard to emit its characteristic love-note there. Such are some of the "plums" that we venture to pick out from this interesting memoir, which should be in the hands of every bird-lover who goes to Egypt.

60. *Gadow's 'Southern Mexico.'*

[Through Southern Mexico, being an Account of the Travels of a Naturalist. By Hans Gadow, M.A., Ph.D., F.R.S. 1 vol. 527 pp. Witherby & Co. Price 18s. net.]

A well-written record of journeyings in a little known part of the world, interspersed with notices of its animals and plants, and profusely illustrated by original photographs, is sure to be an attractive piece of work, and Dr. Gadow's volume comes well under this category. Though a few English travellers have written about Mexico of late years, and a magnificent work on its Biology is now nearly complete, that country has been left mainly to our cousins on the north side of the Republic, where railways and hotels have rendered it easy of access. Dr. Gadow and his wife, however, selected for their investigation the most remote portion of Mexico, where the American invader had hardly penetrated and "wild nature" is in many places still almost undisturbed.

Although it might be suppposed that the "Strickland Curator," even when abroad, would not fail to devote his main investigations to birds, Dr. Gadow did not take this severe view of his duties, and rather turned his attention to the inferior class of Reptiles. Nevertheless we find a certain number of "birdy" passages in the volume. A lively description of the curious ways and manners of the "garrapateros" (*Crotophaga sulcirostris*) is given. This "funny-looking" Cuckoo is ever present in the grassy part of the

Mexican hot-lands, and has, as is well-known, eccentric breeding-habits, but not those of our European Cuckoo. Several females lay their eggs in one nest, in which they sit in company, while, there not being room for all of them at once, the excluded ones perch upon the margin of the nest and wait their turn to "go on."

On the ride from Tehuantepec to Oaxaca an abundance of bird-life was met with. "Long-tailed Parrakeets whirled round in swarms, and the short-tailed Lories climbed about in pairs, while little Inca Doves and brown Pigeons, Grackles and Cassiques, Hawks and Cormorants, Herons, and black and red-faced Vultures were also to be seen." But the pretty long-tailed blue and white Jays—well-named *Calocitta formosa*—were the favourites, and watched the party from the overhanging branches with their top-knots well curved forwards (as shown in an accompanying illustration), and were so confiding as to whistle back when whistled to. It is new to us that the Mexican Hang-nests (*Icterus*) have taken to tying their pendent houses to the telegraph-wires (p. 207), and that *Hirundo callorhina* (whatever that may be?) places its nests on the eaves of the old houses. But the reader of Dr. Gadow's volume will find these and other interesting facts described in its pages, and we strongly recommend its perusal, although we think that a little more ornithology might have been well introduced into it.

61. *Godman's 'Monograph of the Petrels.'*

[A Monograph of the Petrels (Order Tubinares). By F. DuCane Godman, D.C.L., F.R.S., President of the British Ornithologists' Union. With hand-coloured plates by J. G. Keulemans. Part IV. Witherby & Co., April 1909.]

In January (see above, p. 175) we noticed the issue of Part III. of this important work. We have now to record the publication of the fourth part, which continues the account of the numerous species of *Œstrelata* until its termination with *Œ. axillaris* of the Chatham Islands. Altogether thirty-two species of this genus are recognised, of which all but five are figured in Mr. Keulemans's best style. The other genera treated in the present number are *Pagodroma*, *Bulweria*, *Macronectes*, *Fulmarus*, *Daption*, *Halobæna*, and *Prion*. *Macronectes*, we may remark, is a new name for *Ossifraga*, it having been discovered that the latter term has been previously used in Zoology in 1835. The next number, we believe, will be mainly devoted to the Albatrosses, and Part VI. will conclude the work.

62. *Grinnell on the Birds of the San Bernardino Mountains.*

[The Biota of the San Bernardino Mountains. By Joseph Grinnell. University of California Publications in Zoology, vol. v. No. 1, pp. 1–170. Berkeley, Cal., 1908.]

This memoir contains the results of explorations of the San Bernardino Mountains in 1905, 1906, and 1907. But some of our readers may ask, where are these mountains? To this we answer, in the words of the author, "The San Bernardino Mountains constitute the largest high mountain-group in Southern California, and include the highest peak south of Mt. Whitney. The forested area is more extensive than elsewhere in Southern California." Furthermore the isolation of this mountain-group from any other of approximately similar altitude affords an attractive feature. Mr. Grinnell's map and sections fully illustrate these points, and shew that the Lower Sonoran Zone, the Upper Sonoran Zone, the Transition Zone, and at least the two lower divisions of the Boreal Zone (of Dr. Merriam) are represented in this mountain-range.

Mr. Grinnell discusses at full length the Plants, Birds, Mammals, and Reptiles which he collected, in order to establish these views. The Birds, with which we are mainly concerned, met with special attention, as might be expected from the Editor of 'The Condor.' Over 1260 skins were collected, as well as many nests and eggs. Of 139 species found in the district examined, 48 are believed to be permanently resident, 68 are summer visitors, and only 23 are transient.

The following passage contains Mr. Grinnell's general views as to the Avifauna of this mountain-group:—"The Ornis of the San Bernardino Mountains, in common with that of the other high mountains of Southern California, bears the closest resemblance to that of the Sierra Nevada of east-central California. A tendency towards increase in size of such San Bernardino species as are subject to geographical variation is quite noticeable; so that in certain cases, such as the Hermit-Thrush and Creeper, the San Bernardino birds are somewhat intermediate in the direction of the Rocky Mountain races. Other species, like the Stephens' Fox-Sparrow and the Grey Flycatcher, show large size, but are without parallels in the Rocky Mountain region. With variable birds in the mountain systems of California, there seems to be a general increase of size from the north towards the south, a reversal of the case on the Atlantic Coast."

63. *Hanitsch on the Raffles Museum, Singapore.*

[Guide to the Zoological Collections of the Raffles Museum, Singapore. By R. Hanitsch, Ph.D., Director. With 21 plates. Singapore, 1908, October. 112 pp.]

Dr. Hanitsch has kindly sent us a copy of his lately published "Guide" to the zoological portion of the Museum at Singapore, of which he is the Director. It it of course quite of a popular character. It is written in English, and therefore is not available for the native Malay. But it is hoped that it may be useful to the European schoolboy, who visits the galleries in steadily increasing numbers.

The section relating to the "Birds" contains about twenty pages, and is, like the rest of the "Guide," almost entirely devoted to the characteristic forms of the Malay Peninsula, which, as is well known, are abundant and remarkable. The peninsula is the headquarters of the Burmese Pea-fowl and Argus Pheasant, besides other splendid members of the Gallinaceous Group. The Malayan Pigeons are likewise numerous. Other remarkable Malaccan groups are the Barbets, Hornbills, Trogons, Broadbills, and Sun-birds, on all of which comments are made. We have no doubt that the publication of this "Guide" will bring many additions to the shelves of the Raffles Museum.

64. *Howard's 'British Warblers.'*

[The British Warblers: a History with Problems of their Lives. By H. Eliot Howard. Pt. III. London: R. H. Porter, Feb. 1909. Price 21s. net.]

We have before us another part of Mr. Howard's 'British Warblers,' and find the illustrations, which are one of the great features of the work, as good as, if not better than formerly. Coloured figures are given of the Chiffchaff in autumn plumage, the male and female Blackcap-Warbler, Pallas's Willow-Warbler, and Radde's Bush-Warbler, photogravures of the female Chiffchaff and of Blackcaps under various conditions completing the series. It is hardly possible to say which we admire the most, but certainly the delicacy and softness of the last-mentioned are most remarkable.

The letterpress discusses in very full style the life-history of the Blackcap—especially the courtship, the habits during breeding, and the vocal powers. Four points are emphasized in particular: the development of the song of the male from year to year, its deterioration after coition, the powers of imitation, and evidence of emulation. Incidentally Mr. Howard tells us that he believes that the acquired power of imitation may be inherited, and throughout he shews how carefully and thoroughly he has investigated the phenomena with which he deals.

As usual, no life-histories are given of the species that do not breed in Britain.

65. *Jourdain on European Birds' Eggs.*

[The Eggs of European Birds. By Rev. F. C. R. Jourdain. London, 1909. 8vo. Pt. III. pp. 161–240, pls. 15, 21, 22, 28, 29, 60, 69, 72, 87, 88, 90, 92, 94, 105.]

Mr. Jourdain's book has now reached its third part, which concludes the *Motacillidæ,* and treats of the *Certhiidæ* (including *Sitta*), the *Paridæ* (including *Regulus* and *Panurus*), and the *Laniidæ.* The letterpress fully maintains its excellence, and is even more interesting than usual, as it contains the critical races of Creepers, Tits, and so forth. An instance in point is the difference of habits between the Marsh- and Willow-Tits, where we quite agree with the author that the latter in all probability excavates its own nesting-hole and utters a peculiar note.

The plates are very good and the impressions clear, the figures of the eggs of *Molothrus cabanisi*, *Cisticola cisticola* *Sylvia melanocephala*, *Acrocephalus schœnobænus*, *A. arundinaceus*, *Totanus fuscus*, and *Numenius phæopus* being admirable. The larger eggs are the least successful and come out rather flat-looking. The variety of the egg of the Goldcrest with a white ground is not included, and the colour in the case of the Grasshopper Warbler is scarcely pink enough. But our only real objection is to the number of very similar eggs figured of the Redshank, Black-tailed Godwit, Noddy, and Adriatic Gull, or—in a lesser degree—to the absence of a representation of a boldly marked specimen of the Stone-Curlew, such as is not uncommon.

66. *Knight on the Birds of Maine.*

[The Birds of Maine, with Key to and Description of the various Species known to occur or to have occurred in the State, an Account of their Distribution and Migration, showing their relative abundance in the various Counties of the State as well as other regions, and Contributions to their Life-histories. By Ora Willis Knight, M.S. Bangor, Maine: 1908. 1 vol. 8vo. 693 pp.]

The love of birds is far spread in America, and most of the enlightened States of the East and West have Manuals of their native species. Here we find a good solid volume on the Birds of Maine, which will be also serviceable for the dwellers in Lower Canada, which the State of Maine so closely adjoins. A List of the Birds of Maine was published some years ago, and, as will be seen by the 'Bibliography' in the present volume, a large number of books and memoirs refer more or less to the subject. But the present publication is much more than a List. It is, in fact, a complete treatise on the Ornis of the State, containing descriptions of all the species, keys to assist in their identification, and all necessary particulars concerning their prevalence and distribution in the different parts of Maine.

The author estimates the species of birds as positively occurring, or having occurred of their own free will, within the limits of his work as 327. Of these only 26 are permanent residents, including 2 introduced species, whereas the summer-visitors are as many as 115, and those occurring chiefly or entirely as transient visitors are 75. The winter-residents and winter-visitants of fairly general or regular occurrence are 40; the accidental visitors or occasional stragglers are 67; whilst the remaining 4 species included in the list are now extinct.

Mr. Knight follows the arrangement and nomenclature of the American 'Check-list' throughout, and quotes its "number" at the head of each of his species. After a short description he devotes a few lines to explain its general geographical distribution, and then gives a list of the various exact localities in Maine in which it has been observed, adding carefully the authority for its observation. Full particulars then follow as to its habits, nest, and eggs, and any other point in its history worthy of record. We have, therefore, in Mr. Knight's volume a complete Handbook of the Birds of Maine, amply sufficient for the information of any resident in the State who takes a general interest in the native birds and wishes to determine a doubtful species. We have no doubt that Mr. Knight's work will have a good circulation among the residents in the State of Maine and its vicinity, and will serve to increase their knowledge of the bird-life which surrounds them.

67. *Lydekker's 'British Bird Book.'*

[The Sportsman's British Bird Book. By R. Lydekker. London: Rowland Ward, 1908. Pp. i–xviii, 1–620. Price 30*s.* net.]

Mr. Lydekker's book being written specially for sportsmen, he has been careful to adapt it to their chief requirements. He tells us that the descriptions have been made simple, but sufficient, and that the records of the occurrences of the rarer species are full and up to date, while short life-histories are added and figures given in every case. We cannot, however, agree with the author in considering the illustrations true to nature. True to nature, in our opinion, means true to life; and photographs from stuffed birds or skins in Mr. Rowland Ward's series cannot be considered satisfactory. But we are far from saying that the whole work will not be found most useful to the class to whom it is intended to appeal; it may, indeed, meet all their requirements, and much of the letterpress will interest a wider circle, the coloration of the young birds being an instance in particular.

Six hundred species are included, without distinction between truly British and other forms, though square brackets are placed round the names of very rare stragglers.

No authorities are given for the facts recorded, when already published, as Mr. Lydekker considers such to be public property. He dislikes, moreover, the splitting up of generic groups, though he recognises the main races proposed by modern writers.

68. *Menegaux on the Nest of the Oven-bird.*

[Sur le nid des Fourniers (*Furnarius* Vieill.). Par M. A. Menegaux. Bull Mus. d'Hist. Nat. 1908, no. 1, p. 6.]

The author bases his article on four nests of a *Furnarius* procured by the "Mission de Créqui-Montfort," from Salta, in Northern Argentina. Unfortunately, no specimens of the builders of these wonderful structures were brought home, but there is little doubt, we think, that M. Menegaux is correct in referring them to *Furnarius rufus*. Most of the naturalists who have visited Argentina and Paraguay have written on the nest-building of this remarkable bird, and M. Menegaux, who has quoted Azara, Burmeister, Holland, Gibson, Goeldi, and other authors on the subject, has not, so far as we can see, added much to our knowledge of it. In fact there is not much more to be said than what has been already recorded by former writers, amongst whom Hudson, in 'Argentine Ornithology,' should be specially quoted. There is a good series of the nests of *Furnarius rufus* in the British Museum, and a specimen of it is exhibited in the Bird Gallery.

69. *Menegaux on Two new Bolivian Birds.*

Descriptions de deux formes nouvelles d'Oiseaux rapportés de la Bolivie par la Mission de Créqui-Montfort. Par M. A. Menegaux. Bull. Mus. d'Hist. Nat. 1908, no. 7, p. 340.]

The birds described as new are *Agriornis andecola paznæ*, from a specimen obtained on the road from Pazna to Urmiri, at an elevation of 3694 metres, and *Brachyspiza capensis pulacayensis* from Pulacayu and Pazna, at a height of about 4200 metres. We may remark that it is absurd, in our opinion, to call an American bird "*capensis*," the law of common-sense being more obligatory than that of priority. The so-called "*Brachyspiza capensis*" is our old friend *Zonotrichia pileata*, one of the commonest and widely diffused birds in South America.

70. *North on the Nesting-site of* Gerygone personata.

Notes on the Nesting-site of *Gerygone personata* Gould. By Alfred J. North. Rec. Austr. Mus. vii. No. 3 (1908).]

"Of the many stratagems used by birds to secure immunity from harm no more ingenious device is there than that of the Masked Bush-Warbler, which nearly always builds its hooded, dome-shaped nest close to a wasps' nest."

An excellent photograph of a nest of this bird and of the adjoining wasps' nest, taken in the scrub near Somerset, Cape York, in October 1907, illustrates this remarkable habit.

71. *North on Australian Bower-birds.*

[Notes on Newton's Bower-bird and the Tooth-billed Bower-bird. By A. J. North. Vict. Nat. xxv. p. 160 (1909).]

In this paper, which was read before the Field Naturalists' Club of Victoria on the 18th of January last, Mr. North gives us much information concerning two of the rarest and most interesting of the Australian Bower-birds, *Prionodura newtoniana* and *Scenopoëtes dentirostris*.

Newton's Bower-bird was described by Mr. De Vis in 1883, but it was not until November 1908 that its nesting-place was discovered "by Mr. George Sharp's black boys" in the dense scrub about thirty miles from Atherton, in Queensland. The nest is an open cup-shaped structure placed in or near a tree-trunk. (The eggs are of a nearly uniform faint creamy or warm white, "totally different from those of the typical Bower-birds, which are noted for their strikingly contrasted colours and the peculiarity of their markings." The curious habits of the males and the large bowers which they construct are described from Mr. Sharp's information. He also tells us that the hen builds a bower for herself, similar to that of the male, but much smaller.

The Tooth-billed Bower-bird, which was originally described by Ramsay in 1875, has also long remained unknown as regards its nesting-habits, but Mr. Sharp has solved this riddle also. As is told us by Mr. North, Mr. Sharp found the first nest of this bird about five miles from Atherton, in N.E. Queensland, on the 7th of November, 1908, and a second on the following day. The nest is a frail structure very loosely built, as will be seen by Mr. North's figure of it. The first nest contained two eggs of a uniform creamy-brown colour, resembling very much the eggs of *Æluroedus maculosus*. Strictly speaking, however, *Scenopoëtes* is not a Bower-bird, for it makes no bower. On the other hand, it is not a true Cat-bird, for it forms a playground, which the Cat-birds do not. Mr. Sharp's field-notes on both these species, which are given by Mr. North at full length, are of great interest, and he well deserves the best thanks of all ornithologists for the trouble he has taken in the matter.

72. *North on a new Australian Parrot.*

[Note on some Living Examples of *Psephotus dissimilis*. By Alfred J. North. Vict. Nat. xxv. p. 175 (1909).]

Mr. North examined at Sydney 16 living specimens of a Parrakeet brought from Pine Creek, some 200 miles S.E. of Port Darwin, in the Northern Territory of South Australia. At first he regarded them as referable to *Psephotus dissimilis* of Collett described from the same locality (*cf.* Hartert, Nov. Zool. xii. p. 214), but on further examination he found certain differences, which are pointed out. Should it prove to belong to a distinct species, Mr. North proposes for it the name *Psephotus cucullatus*.

73. *Oberholser on the Alcedinine Genus* Ramphalcyon.

[A Revision of the Kingfisher Genus *Ramphalcyon* (*Pelargopsis*). By Harry C. Oberholser. Pr. U.S. Nat. Mus. xxxv. p. 657. Washington, Feb. 1909.]

The persistent efforts of Dr. W. L. Abbott during his various explorations of the East Indian Islands have furnished the U.S. National Museum with a good set of specimens of Kingfishers of the genus *Pelargopsis*, which have been the main basis of the present memoir. Mr. Oberholser prefers to call the genus *Ramphalcyon*, because, as he says, "Gloger's term *Pelargopsis* is certainly not identifiable." As regards this, however, we may point out that "*Ramphalcyon*" seems to be in a similar scrape. It was published by Reichenbach in 1851 without a description of any sort, and no type was ever assigned to it by its author. Under these circumstances we see no reason why *Pelargopsis*, which was adopted by Cabanis and Heine in 1860, should be superseded.

Mr. Oberholser divides the genus *Ramphalcyon* (scr. "*Rhamphalcyon*") into three sections, each of one species—*R. amauroptera*, *R. melanorhyncha*, and *R. capensis*. The second of these species is divided into three subspecies and the third into sixteen subspecies. Of the latter group four new subspecies are characterized—*R. c. isoptera*, *R. c. nisoeca*, *R. c. cyanopteryx*, and *R. c. hydrophila*. But some of these so-called subspecies (e. g. *R. gigantea*) are manifestly so different as to be entitled to full specific rank, while some of the others seem to be founded on very weak characters. It seems to us also a great mistake to call sixteen birds which belong to a purely Oriental group "*capensis*," and we fully agree with Dr. Sharpe in the "manifest incongruity of such an appellation." It is, moreover, quite impossible to decide to which of the closely allied forms Linnæus's name *Alcedo capensis* should be referred. The appellation *capensis* is consequently void for uncertainty, and in our opinion should be rejected altogether.

74. *Ogawa's 'List of the Birds of Japan.'*

[A Hand-list of the Birds of Japan. By Minori Ogawa. Ann. Zool. Japon. vol. vi. p. 337 (Dec. 1908). Tokyo.]

The sixth volume of the 'Annotationes Zoologicæ Japonenses' (auspiciis Societatis Zoologicæ Tokyonensis seriatim editæ) closes with a revised list of the Birds of Japan (exclusive of Saghalin and Formosa) prepared by the late Minori Ogawa. The list gives the names and most important synonyms of the 502 species and subspecies recognised by the author as belonging to the "Fauna Japonica." The native Japanese names and the exact localities are likewise given.

The editor of the 'Annotationes' adds the following remarks on the sad fate of this young and promising zoologist:—

"While this List was passing through the press the author Mr. Minori Ogawa died, after a long illness. Thus was frustrated the expectation which the author had entertained to greatly improve the form and matter of the List. In the deceased we have lost a young and enthusiastic observer of birds and bird-life, which, in the dearth of scientifically trained ornithologists in this part of the world, will be keenly felt by all who take interest in the progress of zoological knowledge."

A former very useful article prepared by Ogawa (on the birds of the Japanese Islands) will be found noticed in this Journal for 1906 (p. 593).

75. *Oustalet on the Birds of Foa's Expeditions.*

[Resultats scientifiques des Voyages in Afrique d'Edouard Foa, publiées sous les auspices du Museum National d'Histoire Naturelle. Paris, 1908. 4to. 731 pp.]

Among the contributions of various Naturalists to the Memorial Volume of the late Edouard Foa, a distinguished traveller in Africa, is a short memoir by the late Emile Oustalet on the birds which Foa had collected and presented to the French National Museum. They are referred to 72 species, mostly procured in Nyasaland and Zambesia at different places, and generally well known. This is an extension of the List published by the same author in the 'Bulletin' of the Museum for 1898 (iv. p. 58).

76. *Sharpe on the Ornithological Literature of* 1907.

[Zoological Record. Vol. xliv. 1907. Aves, by R. Bowdler Sharpe, LL.D. 8vo. 138 pp. London, Dec. 1908. Price 6s.]

Under the new system, which we described last year ('Ibis,' 1908, p. 539), the 'Zoological Record,' now published by the Royal Society of London for the International Council and for the Zoological Society of London, seems to progress and prosper. The section of "Aves," as last year, has been undertaken by Dr. Bowdler Sharpe. The list of titles with which it commences is longer than ever, embracing about 70 pages of double columns. It may be said that some of the papers entered in it are frivolous; but, even if this is really the case, they do no harm, and the "List of Titles" should be as complete as it can be made and should contain the names of all authors who write on Birds.

After the List of Titles comes the "Subject Index," in which the previous titles of the List are referred to by the author's name and the number of the title attached to it in the List. This portion likewise appears to be full and complete. The geographical section (p. 81) will be most useful to ornithologists, as will also the "Systematic Index," which concludes the section "Aves."

We observe that the error in the name of the "Cathartiformes" (p. 106) which we pointed out last year has not been corrected. We may also remark that we can find no mention of Wytsmann's 'Genera Avium' in the 'Record,' although two parts (part vii. Steganopodes, and part viii. Musophagidæ) were issued in 1907, and Dr. Sharpe's name appears on the titlepage as that of a contributor to the work in question.

77. *Snouckaert van Schauburg's 'Avifauna Neerlandica.'*

[Avifauna Neerlandica—Lijst der tot dusverre in Nederland in wilden staat waargenomen Vogelsoorten, door Mr. Dr. R. C. E. G. J. Baron Snouckaert van Schauburg, Voorzitter der Nederlandsche Ornithologische Vereeniging. Met 12 Illustratien, door den Heer T. Csörgey. 1 vol. Leeuwarden, Melier & Schaapsma. 1908.]

In our last number (above, p. 379) we gave a notice of Dr. Van Oort's memoir on the Birds of the Netherlands, and stated that a copy of another work on the same subject, prepared by Baron Snouckaert van Schauburg, had also been received. This last-mentioned volume is now before us, and we have great pleasure in introducing it to British ornithologists, who will find it very useful in tracing out the range of British species.

The author writes in his native language, which is obviously proper in his case, but Dutch is so closely allied to English that there will be little difficulty in understanding it, especially for those who have some acquaintance with German. He begins, we are glad to say, with the highest birds, not with the lowest, and enumerates 332 species to be included in the 'Avifauna Neerlandica.' No descriptions are given of the species, but sufficient references to other works in which descriptions can be found are added, and the exact mode of the occurrence of every species and its frequency or scarceness are concisely stated. In his nomenclature Baron Snouckaert is still more of a trinomialist than Dr. Van Oort, nearly every species being provided with three names. He has likewise fallen into the bad habit of altering some of Linnæus's best-known specific terms—for example, calling *Muscicapa grisola* "*Muscicapa striata.*" In our opinion, Linnæus's terms ought to be held sacred for all generations, especially when, as in the case alluded to, the authorship of the work from which the novel term is taken is by no means certain.

Twelve nicely drawn coloured plates ornament the present work. We should mention that *Turdus coburni* Sharpe (Bull. B. O. C. xii. p. 28, 1901) is included in the present work on the faith of a specimen obtained in Holland on

March 15th, 1895. But we cannot believe that this supposed species is anything more than a "sport" of *Turdus iliacus.*

78. *South African Ornithologists' Union, Journal of the.*

[The Journal of the South African Ornithologists' Union. Edited by Alwin Haagner, F.Z.S., Dr. J. W. B. Gunning, and B. C. R. Langford. Vol. v. no. 1. Pretoria, Transvaal. April 1909.]

We have received vol. v. no. 1 of this Journal. It commences with the Report of the Fifth Annual General Meeting of the S. A. O. U., which was held at Grahamstown, in the Zoological Laboratory of the Rhodes University College, Dr. Duerden, Professor of Zoology at the College, President, in the Chair, and seems to have passed off very successfully. Dr. Duerden gave an interesting and useful Presidential Address on the domesticated Ostrich of South Africa, which is printed in this number. This is followed by a note on the Black-faced Love-bird (*Agapornis nigrigenis* *), illustrated by an excellent plate of this lovely species, which appears to be plentiful in North-western Rhodesia, and occurs also in German West Africa. Other papers are by Major Stevenson Hamilton "On Migratory Birds at Komatipoort," by the Rev. Noel Robarts "On *Pyromelana oryx*," and by Mr. P. A. Sheppard "On the Birds of Beira."

79. *Stone on Methods of Recording the Migration of Birds.*

[Methods of Recording and Utilizing Bird-Migration Data. By Wilmer Stone. Proc. Ac. Nat. Sci. Philad. 1908, pp. 128–156.]

It is clear that the migration data which a single individual can furnish must of necessity be meagre, and that he may miss many birds or fail to see them on first arrival. The Delaware Valley Ornithological Club therefore has taken the lead in America in organizing corps of observers in limited areas, and hopes to arrive at more reliable conclusions from their joint evidence, both as to the earliest arrival of a species and the arrival of "the bulk." And "the bulk," which observers are specially requested to note, is that of flocks of different species rather than flocks of each separate species. The author considers, moreover, that in the case of individual records the best plan is to select the date at which the species had arrived at half of the stations, though he admits that even this method leaves room for error.

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* See W. L. Sclater, Bull. B. O. C. xvi. p. 61 (1906). This species has also been figured in the Av. Mag., Oct. 1908, from living specimens, and there are two pairs of it in the Zoological Society's Gardens.

By means of graphs curves may be traced of the movements of any particular form, and specimens are given of such curves compared with similar curves in each case for temperature.

The method proposed appears to be an improvement on those used at present, and we shall watch with interest its fuller development.

80. *Van Oort on Birds from New Guinea.*

[Note XXI. On New Guinea Birds. II. By Dr. E. D. Van Oort. Notes Leyd. Mus. vol. xxx. p. 225.]

Dr. Van Oort gives an account of three collections of birds from New Guinea lately received by the Leyden Museum. Two of these, from Western New Guinea, were presented by Mr. Palmer van den Broek and Mr. P. J. van Cloven, while the third (from the Owen-Stanley Mountains) was purchased of Mr. J. Henkelman.

The specimens are referred to about 60 species and subspecies, amongst which *Cyclopsitta desmaresti intermedia*, *Orthonyx temmincki victoriana* (from Mt. Victoria, 12,000 ft.), and *Machærirhynchus nigripectus harterti* are described as new subspecies. Some good Paradise-birds are represented in the series—*Cnemophilus macgregori*, *Pteridophora alberti*, and *Macgregoria pulchra*. One adult specimen of the curious *Paramythia montium* from the Owen-Stanley Mountains is likewise catalogued.

XXVIII.—*Letters, Extracts, and Notes.*

We have received the following letters, addressed "To the Editors of 'The Ibis'":—

Sirs,—I will ask you to allow me to correct two errors in my article on the breeding-seasons of birds in Southern Kameroon, which I have only lately discovered.

In the explanation of text-fig. 6, 'Ibis,' 1908, p. 562, the line stated to represent the "Rainfall at Duala" is the line intended for Ebolwoa, and that stated to represent the "Rainfall at Ebolwoa" is the one for Duala.

In the ninth line from the bottom of the same page the rainfall for the year at Ebolwoa should be 1·8 metre instead of "1·1 metre."

Yours &c.,
George L. Bates.

Bitye, in the interior from Kribi,
Kamerun,
27th Jan., 1909.

Sirs,—In the 'Jubilee Supplement' of 'The Ibis' (page 86) a mistake has occurred as regards the Pigeons of the Canaries and Madeira (line 20 from the bottom). It should have been stated that Godman pointed out the difference between *Columba laurivora* of Gomera and *C. trocaz* of Madeira, and also described a third species from Teneriffe which he called *C. bollii.*

I shall be obliged if you will insert this correction in the next part of the 'Ibis.'

Yours &c.,
F. D. Godman.

45 Pont Street, London,
May 24th, 1909.

Sirs,—In the last issued part of 'The Ibis' (above, p. 291) my friend Mr. M. J. Nicoll has proposed to call the White-spotted Bluethroat "*Cyanecula suecica leucocyana,*" but in this I cannot agree with him, for the following reasons:—I have examined many specimens of the form with the blue gorget, and have found that almost all of them had a small spot of white on the middle of the throat. In several of them this spot was scarcely larger than a pin's head, and in one, which had an apparently unspotted blue gorget, I discovered by close examination, on moving the central feathers, a slight white speck. It appears to me, therefore, that the form with the blue gorget is merely an individual variety of the white-spotted bird, and not even a subspecies, and that the older birds have usually a larger white spot than the younger ones. Brehm described the unspotted Bluethroat in 1822 (Beitr. zur Vögelk. ii. p. 173) as *Sylvia wolfii*, and in the following year (Lehrb. d. Naturg. i. p. 344) figured it with an unspotted blue gorget on the same plate as a specimen with a small white spot, which latter he called *Sylvia suecica*. As, therefore, I consider the bird with an unspotted (or apparently unspotted) blue gorget to be specifically inseparable from the white-spotted bird, I consider that they should both stand as *Cyanecula wolfii* (C. L. Brehm), 1822, and not as *Cyanecula leucocyana* C. L. Brehm, as described by him in his 'Vögel Deutschlands' (p. 352) in 1831.

I am, Sirs, yours &c.,
H. E. Dresser.

44 Hornton Court, Kensington, W.,
20th May, 1909.

Sirs,—The White-fronted Goose (*Anser albifrons*) was until lately regarded as a bird of rare and irregular appearance in Southern Italy, where a single specimen was obtained in the winter of 1870, as has been mentioned by Prof. Costa. It has been recorded also from Tuscany and from near Rome. In the north-eastern districts, Lombardy and Venetia, the species is less rare, and of irregular appearance during winter months almost every year. But it does not seem to have occurred on the Puglie, in Calabria, or on the islands in the Mediterranean. Last year, however, in December, large flocks of this bird arrived in the Capitanata and the large marshes of Manfredonia, and stayed the whole winter. Many specimens were caught, and about one hundred were brought to and sold in the markets of Florence. I believe that about sixty of them were preserved, and are now in the Museum of Florence, in my own Museum, and in the collections of Marquis Ridolfi, Messrs. Pierotti, Ragionieri, Zaffagnini, Signorina Picchi, &c., all from Florence.

After the many specimens I have examined, I think it useful to state that in its general brown colouring this Goose varies very much, and shews considerable differences, and that such variations are not dependent on either sex or age. The number of teeth on the side of the upper mandible is usually about 28, and more seldom 26.

From information received from Manfredonia I find that this Goose was met with there in parties of all sizes, but more often in small flocks of four or five than in larger companies, cackling incessantly when in flight. They frequented localities rich in aquatic grasses rather than the corn- and stubble-fields. The flight of these Geese was either continuous and uninterrupted, or gradual, with more or less prolonged halts at convenient feeding-grounds. They fed exclusively, so far as my information goes, on vegetable matter, tender shoots of grass, water-weeds, young corn and other spring crops, and on grain of all kinds. These Geese were extremely shy, cautious, and well on the alert when feeding, so that it was very difficult to approach them.

This Goose is highly esteemed as a table bird and the flesh is delicious, but everything depends on the food that the birds last fed on.

Some young birds in the first plumage with the white feathering entirely absent on the top of forehead and along the base of the upper mandible and replaced by black or brown-black were mistaken for *A. brachyrhynchus*, but in the large number at my disposal I was unable to find a single Pink-footed Goose.

I am, Sirs, yours &c.,
Count E. Arrigoni Degli Oddi.

Padua,
April 21st, 1909.

The following letter has been received from Mr. Boyd Alexander:—

Victoria, Kamerun,
April 9, 1909.

I arrived here about a week ago from Fernando Po after making collections on San Thomé, Annabon, and Principe. These three islands have not come up to my expectations, but the results in the last may atone for the deficiencies of the two former. San Thomé is very mountainous and thickly wooded, but the central mountain does not rise high enough to possess a fauna distinct from that of the lower land; the only two species peculiar to the mountainous district are *Nectarinia thomensis* and *Oriolus crassirostris.*

After a month's work on San Thomé I chartered a small Portuguese steamer which took me to Annabon. This is a very beautiful little island, and from a geographical point of view is quite unique in having a fine lake in the crater of its volcano at an altitude of over 1000 feet. It is thickly wooded, and one would have thought it a perfect paradise for birds; but apart from *Terpsiphone newtoni*, *Zosterops griseovirens*, *Scops feæ*, and *Turturœna malherbii*, there was nothing more to be found. I could not discover the new *Haplopelia* described by Salvadori. After leaving Annabon I went to Principe, where I made a very interesting collection. You will be surprised to hear that the Parrot on that island is quite distinct from *Psittacus erithacus*—in fact I might almost describe it as a black Parrot. I am sending home the description of it, and propose to call it *P. princeps* *. Even when on the wing to a careful observer it appears very much darker than *P. erithacus.* The natives also recognise it as being distinct. I have a good series of adult birds, and the characters remain constant. This Parrot appears to be decreasing very much. Keulemans in his day (1867) reckoned them by thousands, but at the present time they could hardly be told by the hundred. The forest portion of the island, which is their stronghold, is being rapidly converted into cocoa-plantations, while the planters shoot a great number for food. I think the decrease in the numbers of this species might be put down to these two causes.

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* [It is described under that name in Bull. B. O. C. vol. xxiii. p. 74 (1909).—EDDS.]

Besides this Parrot I think I have a new *Cinnyris*. On the whole I have made a representative collection, but there are several species that I shall have to erase from the list as not occurring on the islands.

At the present moment I am in a camp 8000 feet up the Kamerun Mountain. A week's work has given me some very interesting species, quite peculiar to the locality. It is a curious thing, but numbers of the Fernando Po species or close allies, which one would have expected to find here, are absent. I am now making my own road to the Peak, which approaches this spot on the western side.

News of Mr. Walter Goodfellow.—We have been favoured with the sight of a letter from Mr. Goodfellow, dated March 5th of this year, on which day he was encamped at the village of Gossi-ossi, at a height of about 6000 feet in the Owen-Stanley Range of British New Guinea, on a new expedition to procure living Paradise-Birds. On this occasion he had to surmount some difficulties in obtaining leave to catch Paradise-Birds, as stringent regulations had been passed to protect them. He had engaged the services of the same native bird-catchers which he had last year, but was taking them into a new district, and had had much difficulty in crossing some of the mountain-streams, which were at that time in flood. Mr. Goodfellow had found the dancing-place of the Blue Bird-of-Paradise (*Paradisornis rudolphi*) and had just succeeded in catching a fine female alive. He was next proceeding to a district five days' journey farther up, where he would be on a height of about 10,000 feet, and expected to obtain specimens of the long-tailed *Epimachus meyeri* and *Astrapia stephaniæ*. He felt confident that he would be able to bring home pairs of all these three species, and hoped also to get examples of *Epimachus superbus* and of three species of Garden Bower-Birds which inhabit this district—*Amblyornis subalaris*, *A. inornata*, and *A. flavifrons*. Mr. Goodfellow's route this year was on the mountains east of the main range. He was hoping to get away from Port

Moresby on May 19th, and would return with his birds straight to England in order to prepare for the new expedition into Central New Guinea, which was announced in our number for January (see above, p. 194). The preparations for this expedition are well advanced, although it will not start so early as was originally intended. Mr. Goodfellow and the other members of the expedition will leave in October next for the Kei Islands, south of New Guinea, where all the necessary preparations will be made. When everything is ready, the expedition will move on to the coast of Dutch New Guinea, and make their actual start into the interior, towards the Charles Louis Mountains, early in January. A base camp will probably be formed on the foot-hills of the mountains.

It has been definitely arranged, as announced in 'The Times' of May 29th, that a survey-party shall accompany the expedition, under the leadership of Captain C. G. Rawling, who has just been awarded the Murchison Grant by the Royal Geographical Society for his excellent work in Western Tibet. The expenses of this part of the work will be defrayed by the Royal Geographical Society. Captain Rawling will be accompanied by at least one assistant, who has taken the society's diploma in surveying with distinction. Captain Rawling himself will probably proceed to India in September, in order to engage some Ghurkas, who will accompany the expedition as a guard. It is hoped that Captain Rawling's party will be able to make a satisfactory survey of the magnificent range of snow-capped mountains which stretch for a very great distance through the southern part of Dutch New Guinea.

Mr. A. S. Neave's Second Expedition to South Africa.— In January 1908 (see 'Ibis,' 1908, p. 203) we announced that Mr. Neave had left England on a new expedition to Southern Congo-land and Rhodesia. Mr. Neave, who has now returned home, spent nearly the whole of 1907 in the Katanga District of the Congo Free State, and visited the upper portions of the Lufira, Lualaba, and Lubundi Rivers. The last is not far from the frontier of Angola. After that he travelled S.E. into North-east Rhodesia and, after paying a short visit to Fort Jameson, went north, right up the Loangwa Valley, and thence visited Lake Bangweolo, the Lofu River running into Lake Tanganyika, and the Kalungwisi River running into Lake Mweru. He collected about 850 skins of Birds, besides Mammals and Insects, and is now engaged in working out his results at the British Museum, South Kensington.

Mr. Douglas Carruthers's Movements.—Mr. Carruthers, as we expected (see 'Ibis,' 1908, p. 547), has left Samarkand, and gone back to his old headquarters at the Syrian Protestant College, Beirut. His collection of birds formed in the Zarafshan Valley (see above, p. 190) has arrived at South Kensington, and will be worked out by Mr. Ogilvie-Grant. Mr. Carruthers has already made a short excursion to the oasis of Tebuk, on the Hedjaz Railway. When writing, on March 26th, he was about to start on a new expedition from the Dead Sea up the Jordan Valley, and thence to the summit of Mount Hermon.

More marked Storks captured on Migration.—In 'The Times' of March 3rd, Mr. P. McKenzie announces the shooting, in the Polela district of Natal, of a White Stork, which bore on one leg a metal band with the inscription "Ornith. Köspont, Budapest, Hungaria, 209." To this letter there appeared in the same journal for March 17th a reply from Dr. O. Herman, Director of the Royal Hungarian Central Bureau for Ornithology, stating that the bird in question had been liberated in Transylvania in July 1908.

We also learn from 'The Times' of April 26th that the Rev. Ernest Schmitz, Director of the German Catholic Hospice at Jerusalem, has reported the capture of a marked Stork near that city on April 5th to the Hungarian Central Bureau for Ornithology, Budapest. A flock of more than 2000 Storks alighted to rest by one of the lakes near Jerusalem, and five were caught. The marked bird was hatched at Egri, in Eastern Hungary, last season, and marked with the Stork-ring No. 293 on July 8, 1908; it will be placed in the new Palestine Museum. The Storks seen were, no doubt, on their homeward journey from South Africa.

Mr. J. Buckland's Lantern-slides of Birds.—At the Linnean Society's meeting on May 6th last, Mr. James Buckland exhibited a series of sixty lantern-slides received from the United States of America and Australia, in illustration of various species of birds in imminent danger of extinction in consequence of the commercial demand for their plumage as means of adornment. He pointed out the urgency of prohibitive legislation in order to save a multitude of birds, now rare, from the reckless slaughter by the plume-hunters.

The first group of slides shewed the slaughter of Gulls and Terns on the Atlantic seaboard of the United States, so great that President Roosevelt had intervened by proclaiming certain portions as reservations, and thereby saving the Terns in these protected sanctuaries. Next were shown the Snowy Herons on the Florida Keys Reservation; the patrol boats for the enforcement of the protective regulations; the grave of a warden shot in the execution of his duty by a bird-hunter on forbidden territory; and the nesting-habits of the Egret in Florida.

Following these came slides of plumage-birds from Oregon, California, and Venezuela; the flightless birds of New Zealand; the Birds-of-Paradise, Emu, Lyre-bird, various Bower-birds; and the home of the Albatross, the Australian Gannet in its rookery, closing with "The cost of a plume," a series of slides shewing the slaughter of the parent birds and the lingering death of the nestlings by starvation.

Mr. Fenton's Collection of Eggs.—We learn from 'Nature' (vol. lxxx. p. 223) that a fine collection of the eggs of British Birds has been presented by Mr. R. Hay Fenton to the Natural History Museum of the University of Aberdeen. The collection consists of about 7000 eggs, amongst which are some of Ross's Gull from the Kolymá River, and a good series of Cuckoos' eggs accompanied by the foster-parents' clutches. The last addition to the collection was an egg of the Great Auk (*Alca impennis*), purchased in London.

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XXIX.—*On the Ornithology of Cyprus.*

By John A. Bucknill, M.A., F.Z.S., M.B.O.U.

Although during the last thirty years several valuable papers have been published upon the birds of Cyprus, I am not aware that any attempt has hitherto been made to present a systematic account of its Ornithology by one who has had the advantage of local residence for any lengthy period. The opportunity afforded by being stationed in the island in an official capacity for the past two years has enabled me to collect the observations and material for the present paper.

The geographical position and physical features of Cyprus are so generally familiar as to call for little remark in an article of this character. It is probably sufficient to state here that the island is situated between 34° 33′ and 35° 41′ north latitude and between 32° 20′ and 34° 35′ east longitude; its greatest length is about a hundred and forty miles and its greatest breadth—*i. e.* from north to south—about sixty miles. Cyprus is the third largest island in the Mediterranean, its area being 3584 square miles.

It lies tucked away in the angle between Asia Minor on the north and Syria on the east; from the former its nearest point is but forty-six, from the latter about sixty miles. From Port Said on the south it is some two hundred and sixty miles distant. Its chief physical features are two mountain-ranges and a broad flat plain between them. Both ranges run east and west; the southern, which is extensive and constitutes the main watershed of the island, is, on the whole, well wooded with *Pinus pinaster*, *Pinus laricio*, *Juniperus fœtidissima*, *Quercus alnifolia*, *Arbutus andrachne*, and other trees, and rises to a height of no less than 6406 feet above sea-level. The northern range, although extending in all a distance of some hundred miles (the eastern forty-five of which constitute a thin promontory), is narrow, reaches only 3135 feet at its highest point, is not so well stocked with trees, and is generally of less importance.

The southern mountains are known as the Troödos and the northern as the Kyrenia, though the long eastern horn of the latter is termed "the Karpas." The plain, which is called the Mesaoria, extends right across the island, and is some sixty miles long and from ten to twenty broad.

Of the whole area of the island about seven hundred square miles are forest lands (a good deal, however, of which is mere scrub or but sparsely dotted with trees and bushes), about seventeen hundred are under cultivation, about seven hundred are composed of rocky ground incapable of cultivation, and the remaining four hundred are uncultivated. The island is fertile and displays the usual features of agriculture common on those shores of the Mediterranean to which it lies adjacent; barley, wheat, oats, caroubs, grapes, olives, cotton, sesame, aniseed, linseed, hemp, beans, vegetables, and fruits (such as oranges, lemons, melons, pomegranates, and nectarines) are cultivated extensively.

The climate is not unhealthy; the winter is wet and cold, the summer dry and hot; the highest portions of the southern mountains are covered with snow from about mid-November till mid-April; the heat in July, August, and September in the plains is very great, but in the high mountains the summer months are cool and can be pleasantly enjoyed.

The rivers are, with the exception of a few small perpetual streams, mountain-torrents, in flood after heavy rain and dry during the hot weather. There are large salt-lakes near Limassol and Larnaca, and two extensive freshwater reservoirs, recently constructed, in the Famagusta district, all of which are very favourite resorts of migratory water-birds.

There are at Morphou, Limassol, and in a good many other parts of the island, marshes of some extent, where fair wildfowl and snipe shooting is obtainable in winter.

There are approximately a quarter of a million inhabitants.

The published information concerning the avifauna of Cyprus is fairly plentiful. Amongst the constant string of visitors to the island, even during the times of the Lusignan Kings, not a few wrote accounts of their travels, and from these records * we can occasionally gather stray notes on the birds which attracted the attention of the early travellers. Thus, about 1336, one learns from a Westphalian cleric that a nobleman at the Court of Hugues IV. (the ninth monarch of the Lusignan dynasty) kept ten or eleven falconers with special pay and allowances; from another legal visitor in 1394 one gathers that King Jacques I. owned three hundred hawks of all kinds; a third gentleman receives from that King a gift of one hundred partridges; in 1508 a Tyrolese stranger praises the melodious singing of the wild birds; the doves and very fat partridges delight the heart of a priest of Brie in 1533. John Locke, an Englishman who visited the island in 1553, gives a long and accurate account of the Griffon Vulture and the first—so far as I am aware—notice of the trade, even then well established, in pickled or marinaded "Beccaficos," of which he states "they annually send almost 1200 jarres or pots to Venice." Many subsequent writers refer to this article of diet, still a favourite island dainty.

Quails and Wood-Pigeons figure in a Jew's letter written in 1563, detailing the price of Cyprus commodities.

From the Seigneur de Villamont of Brittany we learn in 1589 that it was the practice for the Turkish Pasha of Cyprus to commandeer on behalf of the Sultan, under penalty of death, all falcons caught by the peasantry on the cliffs of Cape Gata near Limassol—the villagers luring the hawks by means of pigeon-decoys and capturing them in net entanglements, and in return for these services living rent and tax free. From the same authority we hear of "red and black

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* 'Excerpta Cypria,' by C. D. Cobham, C.M.G. 1908

"birds which fly in flocks together like Starlings and which, "as soon as they come to Cyprus, with their song and flight "destroy the locusts which infest the Island."

The capturing of hawks and their compulsory despatch to the Sultan is mentioned by an English visitor in 1596.

A Utrecht lawyer in 1598 mentions that "the number of "different birds is very large: Woodpigeons, Quails, "Partridges, Pheasants, Ducks, and Geese, abound, while "Turtle Doves are as plentiful as Sparrows with us . . . . there "are many Eagles and Hawks, even Merlins and Peregrines."

In 1631 a gentleman from Bruges staying at Nicosia writes that the number of Crows was incredible, the trees being black with them; one of his party brought down several with a shot from his arquebus and thereby fell into serious trouble with the Turkish populace. The same writer refers to "the delightful music of the Nightingales."

There are references by another author who was in Cyprus in 1683 to "certain birds not unlike Plovers," and to another sort "not unlike Ducks with a pointed beak," both of which destroyed locusts.

A writer in the early years of the 18th century mentions the abundance of Snipe; Dr. Pococke, F.R.S., in 1738 is attended at Papho by the chief dignitary's Falconer with his Hawk, he identifies the local Partridge as the same as that of France and mentions the Francolin.

The most important chronicler of Cyprus under Turkish rule was the Abbé Mariti, who resided in the island from 1760 to 1767. He inserted in his 'Travels' a few remarks on Natural History: he writes "Among birds the commonest "are Francolins, Partridges, Woodcocks, Quails, Thrushes, "and every kind of waterfowl"; he also mentions the Beccafico, Ortolan, and Vultures.

Passing from the casual references of those who wrote on general matters relating to the island, we come to the first scientific writer who, so far as I am aware, visited Cyprus.

Dr. J. Sibthorp, the editor of the 'Flora Græca' and founder of a Professorship of Rural Economy at Oxford, visited the island in 1787; he made considerable collections and prepared important lists of and notes on the local Birds, Mammals, Reptiles, and Fishes, his manuscript being published in 1818 by the Rev. Robert Walpole. His work was the real foundation of all the subsequent publications relative to the ornithology of the island, although not hitherto fully acknowledged as such by later writers.

Sibthorp appears to have been a thoroughly sound, cultivated and well-read naturalist, and in his interesting journal he recognises and comments upon the migratory character of many of the species which he identified, and the composite nature of the avifauna of the island. He stayed in Cyprus for at least six weeks in April and May, and seems to have made a fairly complete tour, including a visit to the Troödos range. He gives a list of some eighty-one species of birds, exclusive of domesticated varieties: he was not quite sure of the proper identification of a few, but he provides the Linnean nomenclature for those as to which he was certain, and the local Greek names of a large number. He identified the Raven, Hooded Crow, Jackdaw, and Magpie; met with the Jay on Troödos; noticed the Roller, Golden Oriole, Cuckoo, Bee-eater, and Hoopoe; found a Vulture (which he could not distinguish), the Common Kestrel, and several other species of Hawks which were new to him, the Little Owl, Mallard, Garganey (which was probably the Teal), Cormorant, and *Colymbus auritus* (*i.e.* either the Sclavonian or Eared Grebe), the Black-headed, Greater Black-backed, Common and Little Gulls, the Manx Shearwater, Little Tern, Purple, Night, Great White, and Common Herons, the Little Bittern, Curlew, Oyster-catcher, Spur-winged Plover, Stone-Curlew, Moorhen, Land-Rail, Ringed Plover, Black-winged Stilt, Snipe, Redshank, Ruff, Dunlin, Grey Plover, Partridge (as *Tetrao rufus*), Francolin, Pin-tailed Sand-Grouse (as *Tetrao alchata*), Quail, and the Rock-Pigeon, the Ringed, Turtle- and Collared Turtle-Doves *.

Amongst the smaller birds Sibthorp obtained or noted are the Crested and Calandra Larks; the Water-Pipit, Song-Thrush, Blackbird, Corn- and Ortolan Buntings, House- and Rock-Sparrows, *Fringilla linaria* (probably not the Mealy Redpoll but the Linnet), *Fringilla flaveola* (without doubt, both from the Greek name and description which he gives, the Black-headed Bunting); the Pied and Spotted Flycatchers; the Nightingale, Blackcap, Willow-Wren, Wheatear, *Motacilla ficedula* and *M. alba* (perhaps the Pied and White Wagtails), and also *M. flava*; the Coal Titmouse, Swallow, House-Martin, Swift, White-bellied Swift, Common Pratincole, and Nightjar. He also found two species of *Loxia*—probably the Crossbill—on the northern mountains.

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* [For an account of Sibthorp's unpublished 'Fauna Græca,' see Sclater, 'Ibis,' 1904, p. 222.—Edd.]

For seventy odd years after Dr. Sibthorp's visit no further ornithological publication of any importance relative to the island appeared, though several visitors refer to the abundance of game.

In 1863 a party of sportsmen paid a visit to Cyprus, their account being published some years later in the 'Temple Bar Magazine'; amongst their bag they included a few Bustards.

In 1865 appeared at Vienna the important work 'Die Insel Cypern,' by Drs. F. Unger and Th. Kotschy. A list of birds forms part of Appendix IX., which purports to be founded on Sibthorp's journals, coupled with the personal observations of Dr. Kotschy; it is, however, scarcely more than a copy of Dr. Sibthorp's catalogue. The authors mention—excluding domesticated birds—eighty-four species, and their additions to Sibthorp's list include only the Egyptian Vulture, *Sitta syriaca*, the Rosy Pastor, the Grey-lag Goose, a Woodpecker (unidentified), the Great Shearwater, the Marsh- and Curlew-Sandpipers, and the Great Snipe. It is, perhaps, noteworthy that the occurrences of this Vulture, the Nuthatch, and a Woodpecker have not been confirmed by subsequent observers. The writers identify three of Sibthorp's unknown Hawks as the Peregrine, Goshawk, and Sparrow-Hawk, and, as far as can be seen, without good reason, omit from the former's list the Redshank, Grey Plover, Rock-Dove, Common Snipe, Manx Shearwater, and White Wagtail, though possibly perhaps some of their alterations may be due to their change of his scientific nomenclature. In fact, though frequently referred to in later publications as the basis of Cypriote ornithology, their list is little, if at all, in advance of Sibthorp's, and is apparently less accurate and complete.

In 1875, Lord Lilford visited the southern and eastern coasts of Cyprus in the yacht 'Zara' during the spring. Notwithstanding that his stay extended only from April 14th to about May 20th, and that he thus missed the winter birds, his time was well spent; and although the results of his expedition were not published for fourteen years (during which time he had accumulated much further material), he made in the short time at his disposal many interesting discoveries—not unnaturally when it is remembered that he was the first competent modern ornithologist to study the birds of the island. He did not visit the mountains, but nevertheless added to the list many species, such as La Marmora's Falcon, the Red-legged Falcon, Lesser Kestrel, Marsh-Harrier, Barn, Short-eared, and Scops Owls; the Woodchat, Redstart, Stonechat, Isabelline, Russet or Black-throated, Eastern Pied, and Hooded Chats; the Olivaceous, Reed, Savi's, Cetti's Fantail, Spectacled, Palestine (then only just discovered by Canon Tristram), Sardinian or Black-headed, Orphean, Garden, Wood, Chiffchaff, and Bonelli's Warblers, and the Common and Lesser Whitethroats; the Great Titmouse, Black-headed Wagtail, Meadow-, Tree-, Red-throated, and Tawny Pipits; the Sky-, Short-toed, and Wood-Larks, Cretzschmar's Bunting, the Serin, the Red-rumped Swallow, the Sand- and Crag-Martins, the Common and Smyrna Kingfishers, the Wryneck; he identified the "Partridge" as the Chukar; noted the Spotted and Baillon's Crakes, Water-Rail, Common and Demoiselle Cranes, Great and Little Bustards, the Little Ringed and Kentish Plovers, the Woodcock, Jack Snipe, Common, Green, and Wood Sandpipers, the Spotted Redshank, Greenshank, Little Egret, Buff-backed and Squacco Herons, the Bittern, White Stork, Marbled Duck and Shag, the Common, Caspian, and White-winged Black Terns, *Larus melanocephalus*, the Slender-billed, Yellow-legged Herring-, and Lesser Black-backed Gulls, and *Puffinus yelkouanus*.

In 1878, shortly after the British occupation, Lord Lilford despatched a collector to the island. This gentleman, a

Mr. W. Pearse, who had had some experience with Mr. Danford in Asia Minor, spent the winter of 1878–9 in Cyprus, but his mission was, for various reasons, not very successful and he died in the island. He did, however, despatch a number of skins to Lord Lilford and was responsible for the discovery of the Saker, Pallid Harrier, Long-eared Owl, Red-backed Shrike, Fieldfare, Redbreast, Black Redstart, Great Reed-Warbler, Grey Wagtail, Spanish Sparrow, *Sturnus poltaratzskii*, Rook, Great Spotted Cuckoo, Coot, Little Stint, Sanderling, and Flamingo.

In 1879 Herr August Müller published, in the 'Journal für Ornithologie' (vol. xxvii. pp. 385–393), a paper entitled "Zur Ornithologie der Insel Cypern." This paper was the result of the despatch from Cyprus in 1877 and 1878, to Herr Wilhelm Schlüter of Halle on the Saale, of several consignments of birds' skins and eggs amassed in the neighbourhood of Larnaca by a collector whose name is not mentioned and which is not known to me. The paper added to and incorporated Unger and Kotschy's list; and, as the results of Lord Lilford's and Pearse's work had not then been published (they appeared first in 1889), it is right that credit should be given to Müller for the first publication of several important additions to the birds of the island, such as the Lesser Kestrel, Red-legged Falcon, Scops Owl, Sand-Martin, Red-rumped Swallow, Great Spotted Cuckoo, Great Titmouse, Blue Rock-Thrush, Isabelline, Black-eared, Black-throated, Eastern Pied, and Arabian Chats, the Olivaceous and Reed Warblers, the Black-headed Wagtail, Cretzschmar's Bunting, *Emberiza pyrrhuloides*, the Serin, *Caccabis chukar*, the Little Bustard, Little Ringed Plover, Little Stint, Glossy Ibis, Squacco and Buff-backed Herons, the Spoonbill, Spotted Crake, Tufted Duck, and Mediterranean Herring-Gull. He also replaces Unger and Kotschy's Garganey by the Teal.

All these species, with few exceptions, had already been noticed by Lord Lilford or Pearse, but Müller is, at any rate, primarily responsible for the addition of the Blue Rock-Thrush, the Black-eared and Arabian Chats, the Large-billed

Reed-Bunting, Glossy Ibis, Spoonbill, Teal, and Tufted Duck. He also records the eggs of many interesting species which had not previously been noticed nesting in the island, amongst them being the Red-legged Falcon, Great Spotted Cuckoo, Reed-Warbler, Quail, and Yellow-legged Herring-Gull.

In the 'Zeitschrift für die gesammte Ornithologie,' i. p. 397 (1884), E. F. von Homeyer described as *Saxicola cypriaca* a form of *Saxicola morio* found in Cyprus.

In 1887, Dr. F. H. H. Guillemard visited Cyprus under the auspices of Lord Lilford, and made a somewhat extensive tour of the island. He stayed there from Feb. 22nd till June 30th and formed a considerable collection of birds and eggs. Dr. Guillemard paid a second visit from Nov. 30th, 1887, to the beginning of June, 1888, during which period he largely increased his former acquisitions.

Accounts of these two journeys were published by him in two papers in 'The Ibis'—the first, entitled "Ornithological Notes of a Tour in Cyprus in 1887," appearing in Jan. 1888, and the second, "Cyprus and its Birds in 1888," in April 1889.

Guillemard's work on these two expeditions was of the utmost importance, as, besides obtaining examples of the majority of species hitherto locally recorded, he added to the list many others not or only doubtfully identified before. Amongst these may be mentioned the Black Vulture, the Imperial and Bonelli's Eagles, the Masked Shrike, a Dipper (which he did not secure), the Palestine Bulbul, the Mistletoe-Thrush, White-spotted Bluethroat, Ehrenberg's Redstart, Whinchat, Sedge-Warbler, Subalpine Warbler, Rüppell's Warbler, Wren, Tree-creeper, Reed-Bunting, Chaffinch, Hawfinch, and Greenfinch; he discovered, or perhaps rediscovered, the Crossbill; he also found *Sturnus purpurascens*, the Pallid Swift, Pied Kingfisher, Little Crake, *Ægialitis geoffroyi*, Lapwing, Golden Plover, Bittern, Mute Swan, Ruddy and Common Sheldrakes, the Gadwall, Shoveler, Pintail, Wigeon, Pochard, and White-eyed Duck, the Scoter, Pelicans (both *Pelecanus crispus* and *P. onocrotalus*), the Black Tern, Little Gull, and Little Grebe.

From Guillemard's collections Dresser described the Coal Titmouse as a new species, *Parus cypriotes* [P. Z. S. 1887, p. 563].

In July 1889 Lord Lilford published his "List of the Birds of Cyprus" in 'The Ibis' of that date. This enumerated two hundred and thirty-one species and embodied the results of the writer's, Pearse's, and Dr. Guillemard's work, besides referring to the list of Unger and Kotschy, to the paper of Herr Müller, and to information derived from various other casual sources. This was the first systematic modern attempt at Cypriote ornithology.

In 1901 Mr. Ch. Glaszner, an Austrian subject residing at Larnaca, commenced sending to the Hungarian National Museum consignments of specimens collected by him in the island, and since that date has despatched a considerable number to similar institutions, amongst them being the British Museum and that of Mr. Rothschild at Tring.

Dr. J. v. Madarász, from Mr. Glaszner's consignments, separated as distinct several of the species resident in the island: the Scops Owl as *Scops cypria* and the Great Tit as *Parus aphrodite* in 1901 (Termés. Füzetek, xxiv. p. 272); the Jay as *Garrulus glaszneri* in 1902 (Orn. Monatsb. x. p. 163); the Dipper as *Cinclus olympicus* and the Crossbill as *Loxia guillemardi* in 1903 (Orn. Monatsb. xi. p. 5); and the Hooded Crow as *Corone pallescens* in 1904 (Orn. Monatsb. xii. p. 28). Glaszner's large consignments were found by Madarász to include as additions to the list several highly interesting species, notably *Monticola saxatilis, Aëdon philomela, Aëdon familiaris, Sylvia nisoria, Lanius minor, Lanius isabellinus, Sturnus porphyronotus, Scops giu, Circus cyaneus, Circus cineraceus, Buteo vulgaris, Falco subbuteo, Pernis apivorus, Milvus ictinus,* and *Procellaria pelagica,* and to confirm the then slender claims of others such as the Dipper, Mistletoe-Thrush, Great Reed-Warbler, Ortolan, Hawfinch, Pied Kingfisher, Curlew-Sandpiper, Cormorant, and Common Gull.

From May 1901 until Nov. 1902, Miss Dorothy M. A. Bate was in the island. She obtained a number of examples of the local Wren and described it in 1903 as a new species under the name *Anorthura cypriotes* (Bull. B. O. U. xiii. p. 51), and subsequently, in 'The Ibis' of the same year, published an interesting paper entitled "Field-Notes on the Birds of Cyprus." In addition to suggesting the subspecific character of the local Tree-creeper she identified *Pterocles arenarius*, and gave instructive and new information on the local distribution of the Great Spotted Cuckoo, Blue Rock-Thrush, Coot, White Stork, Francolin, and a few other species.

In 1904 Dr. J. v. Madarász published, in the Ann. Mus. Nat. Hung., a lengthy paper "Ueber die Vögel Cyperns." In this publication he gives a complete list of the species represented in the collections sent to him by Mr. Glaszner, besides referring to the earlier works of Unger and Kotschy, Müller, Lord Lilford, Guillemard, and Miss Bate. This pamphlet is in every way a finished and scientific production, well worthy of the reputation of its distinguished author. He enumerates two hundred and forty-nine species and subspecies recorded from the island.

My residence in Cyprus has extended from July 1907 to June 1909, during the whole of which period I have made as many personal notes as my limited opportunities for travel have permitted. I have, moreover, received very valuable assistance from several well-known sportsmen who are officials in the island, notably from Mr. F. R. S. Baxendale, the Commissioner of Papho, who is carefully working his—the western—district; Mr. E. H. D. Nicolls, the Director of Public Works; Messrs. G. Wilson and G. F. Wilson, of the Secretariat; Mr. T. J. Greenwood, Local Commandant of the Cyprus Military Police; Mr. A. K. Bovill, Principal Forest Officer, and Mr. Crawford Noble, his Chief Assistant. Mr. Glaszner has lent me many rare specimens and assisted me in every possible manner.

From the end of February until my departure in June of this year, my friend, Mr. C. B. Horsbrugh, whose work in the Transvaal, and more lately in New Guinea, is well known, has been staying with me, and has made a study of the local spring migration at the freshwater reservoirs, besides visiting the mountains. He made a large collection of skins and eggs, the bulk of which is now at the South Kensington Natural History Museum. Even with all this welcome aid our united endeavours have not as yet been able to accomplish very much, but we have succeeded in swelling the list by the addition of *Turdus iliacus, Turdus alpestris, Podicipes nigricollis, Gypaëtus barbatus, Clangula glaucion, Chenalopex ægyptiacus, Anser segetum, Branta bernicla, Turtur senegalensis, Houbara macqueeni,* and *Chrysomitris spinus,* and in discovering a certain amount about the nesting, migration, and distribution of a good many species.

A word should perhaps be here said as to the local protection of wild birds and game. "Game" in Cyprus is defined to include Pheasants, Francolins, Partridges, Sand-Grouse, Bustards, Wild Ducks, Wild Geese, Woodcocks, Snipe, Quails, and Land-Rails. The inclusion of Pheasants, which have long been extinct in the island, was due, no doubt, to an attempt at their introduction shortly after the British occupation in 1878, the definition first appearing in a law of 1879. There is a summer close-season for all game; Francolins are totally protected for five years from March 17th, 1906. The taking of eggs of game-birds and the export of game are prohibited. There is a close-time for wild birds and their eggs during the breeding-season, except in the case of Sparrows, Crows, Ravens, Magpies, Doves, and a few other species thought to be harmful. The export of skins and eggs of birds is prohibited; but the High Commissioner may grant special permission to enable persons to collect and export birds and their eggs for scientific research. The local Dipper, Wren, Tree-creeper, Crossbill, Chat, Great and Coal Titmice and their eggs are, by a law passed this year, protected at all seasons. A gun-licence, including the right to shoot game, costs ten shillings, and is, as a matter of practice, issued to any person who can produce, which is not difficult, a certificate of respectability from his local "Elders." Very roughly some five thousand gun-licences are issued annually. A good many of the Cypriote upper classes, both

Christian and Moslem, are very keen sportsmen, and, I think, observe the Game Law as well as the English do; but the peasants, amongst whom to carry a gun is not only regarded as a sign of importance, but also as a surety for the safety of themselves and their flocks, are often picturesque poachers, and will at any time shoot anything worth a charge of powder and shot.

The law, both with regard to the preservation of Game and Wild Birds, is probably adequate, but its enforcement is not easy in a place like Cyprus, where there is no such thing as "game preserving," and where any one can and does shoot practically wherever he pleases. However, there are a few forest plantations in which no shooting is allowed, and the new law of this year contemplates the establishment of large "reserves."

Of the distribution of birds in and their migratory movements to and from an island geographicallly situated as is Cyprus, it is difficult to express opinions which may not subsequently be rudely upset, but the following remarks are put forward in the belief that they are substantially correct.

About two hundred and sixty species have been recorded from the island, in the main on very good authority. The list is one which a competent ornithologist would probably be able largely to compile by looking at a map. As time goes on and with closer observation perhaps the number will still be considerably augmented. Of real residents there are very few, and in all they barely exceed forty species, of which a Dipper, a Jay, a Coal Tit, a Wren, a Tree-creeper, a Scops Owl, a Chat, a Great Tit, and a Hooded Crow have all been accorded, on, at any rate in some cases, tolerably good grounds, subspecific rank. Of these nine local forms it is interesting to observe that the first five are entirely confined to the higher parts of the southern mountain-range.

Other typical real residents are the Common Francolin, the Chukar Partridge, the Raven, Jackdaw, Magpie, and Little Owl.

About thirty species are typical summer visitors, arriving in the island in spring, nesting and leaving for warmer climates in autumn: birds such as the Swifts, Masked Shrike, Black-headed Bunting, and the Swallows. But I have no doubt that by no means do all of these summer visitors which arrive in the island remain to breed, many passing on and joining the ranks of the spring and autumn migrants.

Perhaps forty species are what one may term winter visitors: birds such as the Blackbird, Robin, Wigeon and some other Ducks, the Starling, and the Rook; they arrive in the autumn, remain during the winter, and leave in spring for the north. Here, again, many individuals are birds of passage only.

By far the largest class is the spring and autumn birds of passage, which arrive in spring, stay a few days or weeks, pass on to their more northern or more suitable breeding-grounds, and return in the autumn; again wait a little, though not so long, and are off to warmer places. Of course, as might be expected, there are many cases in which individuals belonging to this category do not follow the movements of the bulk of their fellows, but remain in the island either to nest or for the winter. For example, the Blackcap does both; it certainly nests and as certainly remains during the winter, but the numbers which do so are infinitesimal compared with the huge throngs which occur in spring and autumn. The Cranes, in flocks of hundreds, pass over the island, regular almost to a day, in spring and autumn; hardly any even alight, but a few are to be found in the marshes throughout the winter. Such instances might be multiplied almost indefinitely.

Regarded as a point in a migratory line Cyprus is perhaps too near to the mainland to offer a compulsory route; so close is it, indeed, and so much is its climate dominated by that of the neighbouring coasts, that a heavy spell of cold weather on the Taurus will produce a rush of Woodcock, Snipe, and Duck at almost any time.

Although, therefore, the adjoining coast of the Levant probably prevents Cyprus from being a very remarkable halting place, it is nevertheless at the migration seasons a fairly busy spot which a considerable number of migrants utilize. There is much still to be done in the ornithology of the island which only increased interest and careful observation can accomplish. The Chats and Warblers, the Finches and Hawks, and their status in the island are amongst the more obvious tasks for the students of the Cyprus Natural History Society, founded last year, to accomplish. Subjoined is the Cypriote list brought up to date so far as I have been able to do so. For the sake of uniformity, the nomenclature adopted is, so far as is possible, that used by Dresser in his 'Manual of Palæarctic Birds,' but the B. O. U. nomenclature is added, so far as it applies, in cases in which Dresser's is not the same.

1 *. TURDUS VISCIVORUS Linn.

The Mistletoe-Thrush is apparently a winter visitor of considerable rarity. Dr. Guillemard included it in his list supplied to Lord Lilford, and Glaszner obtained a female near Larnaca. Three were noticed by Mr. R. G. Jebb, an official who was stationed for some time at the freshwater reservoirs in the Famagusta district, at that place on Oct. 28th, 1908, and from him and others I learn that the bird seems to occur every winter.

2. TURDUS MUSICUS Linn.

The Song-Thrush is a very common winter visitor. It arrives about the beginning of November, and though, no doubt, many individuals use the island only as a station on their journey south, a large number remain through the winter. They have all left again by the end of March, though the northern migration commences as early in the year as the middle or towards the end of January. It has been thought that this species may occasionally nest in the mountains, but though I have fairly satisfactory notes of its having been seen in April and even in the summer months on the Troödos range, I have not, as yet, authentic evidence of its breeding. It is not unfrequently shot by the Cypriote sportsmen, and sold in the bazaars for eating purposes for a piastre or two.

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* The numbers prefixed to the name of each species are those of Dresser's 'Manual.'

7. Turdus iliacus Linn.

Lord Lilford appears to have been surprised at not having received any record of the Redwing from Cyprus.

The only authentic occurrence of this bird with which I am acquainted is its appearance in very severe weather in the winter a few years ago near Nicosia, where it was noted by a well-known English sportsman, Mr. G. F. Wilson. It would be in any case only a rare winter straggler.

9. Turdus pilaris Linn.

The Fieldfare is a winter visitor, but is decidedly rare.

Pearse obtained a specimen in the winter of 1878–9, Dr. Guillemard two out of a small flock in February 1888, while Glaszner has collected a few in November and December. Mr. G. F. Wilson has recorded this species as occurring on three different occasions only, in very cold weather in November and December, in a period of eight years.

20. Turdus merula Linn.

The Blackbird is a common winter visitor, arriving about the beginning of November and leaving in March. No doubt many individuals are merely passing migrants. It is sometimes noticed as a cage-bird, and is frequently shot and used for food, being sold indifferently with and at the same price as the Song-Thrush, though it is not nearly so abundant as that species.

24. Subsp. Turdus alpestris Ch. Brehm.

A few years ago a nest and eggs of a Ring-Ousel were taken near the ruined castle of Kantara, high on the northern range of mountains, and the old birds seen by Mr. Nicolls, who is well acquainted with the English species.

In July 1907 I watched a pair on the Troödos range quite 5000 feet above sea-level, which, from their behaviour, most probably had young in the vicinity. I was at the time much struck by and noted the large amount of white on the under parts; and as I know the British

T. torquatus intimately in N. Wales, I had no hesitation in ascribing the specimens I observed to the south-eastern form, though being without a gun I was not able to obtain one of them for closer examination. I have little doubt that those recorded by Mr. Nicolls belonged to the same race.

In the absence of any other records of this species from Cyprus, it is impossible to state what is the nature of its distribution in the island. Very few ornithologists have traversed the wilder portions of either mountain-range, and there are in both many retreats where this bird would find a congenial home.

I expect that it is a casual visitor on migration, a pair or two occasionally stopping to nest in certain localities on their northward visit.

25. Monticola saxatilis (Linn.).

The Rock-Thrush appears to be a somewhat uncommon visitor on migration and has very seldom been recorded. Glaszner obtained a female on Troödos on the 19th of September, 1902, and shewed me another female which he had shot at Kellia, near Larnaca, on April 15th, 1905. Mr. Baxendale sent me a third which he had shot at Papho on April 3rd, 1909.

27. Monticola cyanus (Linn.).

The Blue Rock-Thrush has been recorded from the island by several observers. Müller described an adult pair in the collections sent to Schlüter (1877–8), but gave no data; Guillemard obtained two—one in March 1887 in the Limassol district, and the other on May 11th, 1888, in the northern mountains; Glaszner sent two to Madarász, taken, the one (♂) near Stavrovouni Hill on February 28th, the other (♀) at Alethriko on March 18th, 1902, both places being in the Larnaca district. Miss Bate, during her stay in Cyprus, found the species not uncommon in the northern range, and in June 1902 saw several individuals among the ruins of Kantara Castle, one of which could only have left the nest a very short time; at Buffavento, another mediæval ruin in the same mountains, Miss Bate, about the same date, observed others, and during the winter noticed the species in many different places in the range.

It would therefore appear that the bird is, at any rate, a partial resident; but I expect, in the main, it is a migratory visitor, an occasional pair nesting in likely spots, and a few halting to stay for the winter on their southerly movement. It was not met with by Lord Lilford, somewhat to his surprise, but he apparently did not visit those higher parts of the mountains where Miss Bate observed it with such frequency.

29. CINCLUS MELANOGASTER Brehm.

Cinclus olympicus Madarász.

The presence of a *Cinclus* in Cyprus was first recorded by Guillemard, who, in May 1887, observed, but did not obtain or identify, a bird of this genus near Kalopanayiotis, about 4000 feet above sea-level in the Troödos range. He also mentions having noticed "the Dipper" on the summit of Troödos in June of the same year. The actual discovery of the local form of the Black-bellied Dipper is due to Glaszner, who sent two examples to Madarász, one taken on October the 3rd, 1902, and the second on January the 4th, 1904, both on the southern mountains. Since that date, so Glaszner informs me, he has obtained two or three more. I observed this bird on several occasions in the summers of 1907 and 1908 on the little rocky streams near the camp on the Troödos heights; and Mr. Horsbrugh, on his visit to that range in May and June of 1909, found the species tolerably common in suitable localities, and obtained a nice series of both adult and juvenile specimens, most of which are now at the Natural History Museum, South Kensington.

This Dipper is a resident, but is far from abundant, being confined to those high portions of the southern chain where, amongst the small stones and perpetually running brooks, it can find a satisfactory home. It appears to be more common than elsewhere on the very highest slopes of the range. It must nest early in the year, as at the end of May the young are in full though, of course, juvenile plumage. The nest, which with fully fledged young has been found by Mr. Nicolls near Kykko Monastery, has been described by him to me as of similar character to that of the British *Cinclus aquaticus*, and the eggs will, no doubt, be found typical.

I am not competent to express any useful opinion as to the propriety of Madarász's separation of the Cypriote bird as a subspecies, which that author places as intermediate between *C. albicollis* (Vieill.) and *C. cashmiriensis* Gould. The number of specimens available for examination hitherto has, I understand, been limited to about half a dozen, but the series now in London should perhaps enable the matter to be clearly determined. On general grounds it would not be surprising to find some well-marked local characteristics in a non-migratory insular species of such closely restricted range on an island chain of hills. The bird has been well known to several of the English officials for a good many years, and I am credibly informed that the peasant gunners will continue to shoot it for the "pot," though it is now entirely protected by law at all seasons.

42. SAXICOLA ŒNANTHE (Linn.).

The Wheatear is a common visitor on spring and autumn migration. It arrives from the south about the middle or towards the end of March, but, though a few individuals may halt till May, all practically have left by the end of April. It passes back about the end of September and in October. I have no evidence of its nesting in Cyprus.

46. SAXICOLA MORIO Hempr. & Ehr.

Saxicola cypriaca E. F. Homeyer (?).

I must preface my remarks on this and the succeeding five species by stating that I am by no means fully capable of dealing, at present, in an adequate manner with the Wheatears which occur in Cyprus. The nomenclature used by the earlier writers who make reference to them has rendered necessary careful inquiry into the different synonyms utilized. The local records relative to them are very meagre, and, unfortunately, Horsbrugh was, through pressure of other work, unable to pay so much attention to this group as we had hoped, and, consequently, collected but few specimens. Mr. Baxendale sent up, in the spring of 1909, several specimens from the Papho district which baffled both of us, and a casual examination of the skins in the Natural History Museum at South Kensington completed, if possible, my doubts. I have therefore restricted my observations to apparently indubitable facts, and, at a later date, hope to be able to work out the matter in a somewhat fuller manner. With regard to the present species, I do not know if its description by Homeyer as distinct in its Cyprus form is sound, but, in view of its habits, I should, so far as I can judge, doubt any claim to difference from *S. morio*.

However, it is, without any doubt, by far the commonest Chat in the island, and I have found it at all altitudes. As *Saxicola morio* (Eastern Pied Chat), Lord Lilford calls it the "characteristic Chat of Cyprus"; Müller had large numbers of specimens and clutches of eggs, the latter taken from April the 10th to June the 1st—he names it *S. leucomela* and gives a lengthy description of the eggs; Guillemard calls it "extremely common" and obtained several nests with eggs; Miss Bate refers to it as "ubiquitous"; and Glaszner sent many specimens to Madarász obtained from spring till late autumn. Horsbrugh and Mr. C. Noble obtained plenty of nests and eggs this year in April and May. There seems to be a local idea that this Chat is permanently resident in the island, but all I can at present state is that my earliest recorded date is February the 23rd and my latest October the 9th, from which I judge that it is mainly a summer visitor. Mr. Baxendale, who has paid more attention to these birds than any one else, is of a similar opinion.

47. Saxicola monacha Rüpp.

The only record of the Hooded Wheatear from the island appears to be that of Lord Lilford, who saw two examples, of which he obtained one, an adult male, near Larnaca, on May the 5th, 1875.

55. SAXICOLA MELANOLEUCA (Güld.).

The Black-throated Wheatear, the Eastern form of *S. stapazina* (Vieill.), is evidently a visitor at the migration seasons to the island, but, so far, seems only to have been noticed in the spring.

As *S. stapazina*, the Russet Chat, it is mentioned by Lord Lilford as having been met with by him only once in the island; Müller records three adults taken in spring; Guillemard obtained an adult male in the Karpas district on March the 23rd, 1888; Glaszner sent five birds to Madarász collected in the Larnaca district in March and April; and Mr. Baxendale sent me a male shot near Papho on the 2nd of April, 1909.

56. SAXICOLA ALBICOLLIS (Vieill.).

Saxicola amphileuca Ehr.

The Black-eared Wheatear has been less frequently noticed than the preceding species, though it appears to be a similar migrant, and has hitherto only been recorded in spring.

As *S. aurita* Temm. Müller mentions an adult male obtained in spring; it was not observed by Lord Lilford or his collectors, but Glaszner sent two adult males to Madarász, taken near Larnaca on the 19th and 22nd of March, 1902. Mr. Baxendale sent me a male, shot near Papho on April the 2nd, 1909.

According to Madarász, the specimens sent to him belong to the Eastern form *S. amphileuca* Ehr., and not to the Western *S. albicollis* (Vieill.). Doubtless the others recorded belonged to the same type.

57. SAXICOLA FINSCHI Heugl.

One would expect to find the Arabian Wheatear a resident, or at any rate a summer visitor to Cyprus; but from the information at present available it would appear to be a winter visitor. Müller mentions an adult male received from the island; Guillemard thought it rare, and on both his visits only noticed it on some six occasions, the single specimen he obtained having been shot in mid-February 1888, not far from Famagusta; Glaszner sent three males to Madarász from the Troödos range, two taken on February 20th, and the third on September 29th, 1902. Miss Bate states that this species evidently arrives in the island about the end of October, as she first saw it at that time both in 1901 and 1902; she found it not at all uncommon in winter on the lower slopes of the northern mountains, met with it also in the Larnaca district, and once near Papho on the 23rd of March, the latest spring date on which it was observed by her.

I do not feel justified in adding to the above any confident remark, except that Mr. Baxendale, Horsbrugh, and I consider that we have obtained specimens in April of this year.

63. Saxicola isabellina Rüpp.

The Isabelline Wheatear is another Chat which so far appears to be a visitor on the spring and autumn migrations.

Lord Lilford regarded it as very local, but not uncommon in March and April in the Famagusta district, and he and his collectors obtained specimens. Müller records four—adults of both sexes—taken in spring, and Glaszner sent one male to Madarász, captured near Larnaca on August the 14th, 1901. I am not able, at present, to add to the foregoing records any observations which I should care to be regarded as undoubtedly correct.

66. Pratincola rubetra (Linn.).

The Whinchat appears to be a visitor on its spring and autumn migrations, and to be not at all common. Lord Lilford did not see it, but Guillemard obtained two males in April and May 1887, in the northern hills at Akanthou and near Larnaca respectively; Glaszner sent a young bird to Madarász, taken near the latter place on September the 23rd, 1901, and Mr. Baxendale sent me a male shot at Papho on the 2nd of April, 1909.

69. Pratincola rubicola (Linn.).

The Stonechat appears to be a tolerably abundant winter visitor. Lord Lilford found it not uncommon in the open country at the beginning of April; Pearse and Guillemard together record it in November, December, January, February, and March; whilst numerous specimens sent by Glaszner to Madarász were taken in January, February, March, October, and November. Mr. Baxendale, Horsbrugh, and I obtained it in 1909 from the 9th of March to the 5th of April; and I have sometimes noticed it myself in the cold weather. It seems to arrive in October and to leave at the end of March or beginning of April.

75. Ruticilla phœnicurus (Linn.).

The Redstart was first noticed in the island by Lord Lilford, who observed a few individuals in the Karpas district; Pearse sent Lord Lilford two with illegible data; Guillemard obtained a male in the Karpas on April 26th, 1888; Glaszner sent to Madarász sixteen specimens taken in various localities in March, April, September, and October. Miss Bate states that she saw a few among the pine-trees on Troödos during the summer, and found it common in winter in the low hills north of Nicosia.

During the summer of 1908 I repeatedly saw a pair near the grounds of Government House, on Troödos, where they were certainly nesting; Mr. Jebb sent me a male taken at the Acheritou reservoir in November 1908; and Mr. Baxendale, Horsbrugh, and I found and took the bird in fair numbers from the 1st to the 18th of April, 1909. Mr. Horsbrugh saw one near Papho as late as May 18th. The Redstart is no doubt in the main a visitor on the spring and autumn migrations, but, like not a few other species, often finds in Cyprus congenial winter-quarters, whilst a few stay for the summer and nest in the mountains—habits rather typical of birds visiting a middle-range place, such as is this island, with warm lowlands and cool highlands.

76. Ruticilla mesoleuca Ehr.

Ehrenberg's Redstart has not hitherto been often recorded from the island. It was first noticed by Guillemard, who obtained an adult male near Limassol on March 11th, 1887. Glaszner sent four examples to Madarász captured near

Larnaca and on the Troödos range: one in March, one in October, and two in September. Horsbrugh and I did not find the bird very common this spring (1909), but we noticed it and obtained specimens from the 13th to the 21st March; whilst Mr. Baxendale and Horsbrugh took a male at Papho as late as May the 21st. It appears to be a spring and autumn visitor, and I see no reason why it should not nest occasionally in the hills.

84. Ruticilla titys (Scop.).

The Black Redstart appears to be only a winter visitor and fairly abundant, arriving at the beginning of November and leaving towards the end of March.

Pearse sent Lord Lilford two females taken on November the 21st, 1878; Guillemard obtained specimens on March the 11th, 1887, and January the 4th, 1888, near Larnaca and Limassol, at the latter locality finding the species "not uncommon." Glaszner sent a number to Madarász from various localities taken in November, January, and February. Horsbrugh and I observed several this spring near Nicosia on March the 18th.

93. Cyanecula wolfi C. L. Brehm.

The White-spotted Bluethroat appears to be a spring and autumn migrant, though it is possible that it may be a winter visitor. It has seldom been recorded. Guillemard found some, and shot an adult male amongst the reeds at the freshwater lake near Famagusta on February the 13th, 1888. Glaszner sent Madarász four—two males and two females—taken near Larnaca in October 1901.

95. Erithacus rubecula (Linn.).

The Redbreast is a common winter visitor, arriving towards the end of October and leaving towards the end of March, my earliest record of its arrival being October the 25th and my latest of its departure March the 21st. It is well distributed over the island and a good many individuals can always be found in the larger gardens near the towns, whilst on the hills it is sometimes observed in great abundance.

106. Daulias luscinia Linn.

The Nightingale arrives in the island in considerable numbers at the end of March and beginning of April. During the latter month and the early part of May the great majority pass on to the north, but, though I have not as yet personally seen the nest or eggs, I am assured that some remain for the summer and breed in the mountains. Glaszner has obtained it in the middle of September, during which month and the following its return passage doubtless takes place. It is really quite abundant at the spring migration, and from the 21st of March up till the 10th of May, 1909, Mr. Baxendale, Horsbrugh, and I took a number of specimens and must have heard and seen scores. I have often heard and seen it in a small mosque garden inside the "walled city" of Nicosia. But much later dates than ours have been authenticated. Glaszner took a specimen at the end of May near Platres, a village about 4000 feet up on the southern slopes of the southern range; and Guillemard found it common at Lefka on the 23rd and at Kykko Monastery (4000 feet) on the 25th of the same month, and noticed it on the Troödos summit (6000 feet) in early June: so that the reports as to its nidification are probably correct.

107. Daulias philomela (Bechst.).

The Thrush-Nightingale has only been recorded from Cyprus by Madarász, to whom Glaszner sent two specimens taken on April 14th and September 3rd.

Madarász mentions the inclusion in Unger and Kotschy's list of a bird called by them "*Luscinia philomela* Pr. Bonap.," and evidently considers that the authors intended to refer to the present species. But in view of the fact that the ordinary Nightingale, *Daulias luscinia*, is (as *Motacilla luscinia* Linn.) indubitably referred to in Sibthorp's list, whilst *Luscinia philomela* (or *Philomela luscinia*) was quite a common early name for the ordinary Nightingale, I am satisfied that the use of the synonym *Luscinia philomela* by Unger and Kotschy was a mere alteration by them of Sibthorp's nomenclature, and not, as it would otherwise have to be read, an intentional substitution of the one species for the other.

Although, of course, easily confused with *D. luscinia*, and more easily overlooked, I can only say that of the dozen or so specimens of Nightingales which I have handled in Cyprus none belonged to the Eastern species. But it is evidently, at any rate, a migrant in spring and autumn. One of the specimens sent to Madarász was an extremely dark variety.

109. Sylvia nisoria (Bechst.).

The Barred Warbler is another of Glaszner's discoveries, he having sent two young (male and female) specimens to Madarász. They were in autumn plumage, and were taken on August 28th and September 12th.

110. Sylvia cinerea Lath.

The Whitethroat is a visitor on migration, arriving towards the end of March and passing on by the end of April. A few pairs remain and breed in the hills. The return passage takes place about October. It was taken by Sibthorp on April 4th, having alighted on his vessel; Lord Lilford obtained a female near Larnaca on April the 21st, 1875; Guillemard two females in the Famagusta district on March the 26th, 1888; Glaszner sent Madarász a specimen taken near Larnaca on October the 13th, 1901. Mr. Baxendale, Horsbrugh, and I found the Whitethroat not uncommon towards the end of March and beginning of April 1909; and Horsbrugh came across it again in the lower hills of the Southern range, and obtained on the 9th of that month, at Kambos, a nest with four eggs.

111. Sylvia curruca (Linn.).

The Lesser Whitethroat is a common visitor on migration, arriving and departing about the same time as the preceding species. Lord Lilford found it common in the low country near water in April; two of Guillemard's specimens were taken on March the 21st and 29th; Glaszner sent Madarász a number of skins from various localities, the birds being taken in March, April, September, and October.

Mr. Baxendale, Horsbrugh, and I found this species common in company with *S. cinerea*, but did not discover it breeding.

115. Sylvia hortensis Bechst.

The Garden-Warbler is another visitor on spring and autumn migration. Lord Lilford and his collectors apparently did not obtain specimens, but the former records having seen and heard it in May near Papho. Guillemard mentions meeting with it at Kykko Monastery at the end of May 1887 "pouring out a torrent of song," and in June, on the summit of Troödos; Glaszner sent a male to Madarász taken at Larnaca on September the 14th, 1901. Personally we have not yet identified with certainty this species, although I have no doubt that it is our own fault that we have not done so.

117. Sylvia conspicillata Marm.

The Spectacled Warbler is in the main a visitor on migration. It arrives in the middle of March and has passed by the end of April. It returns in autumn, and some undoubtedly stay in the island throughout the winter.

It was noticed by Lord Lilford only near Trikomo, in the Famagusta district; but Guillemard found it tolerably plentiful in early March on the flats between Larnaca and Famagusta, and also near Limassol, and his spring specimens include one taken on April the 7th; he also saw a few pairs later in that month. Glaszner sent a female to Madarász, taken near Larnaca in March.

119. Sylvia subalpina Bonelli.

The only record of the Subalpine Warbler with which I am acquainted is that of a single specimen shot on March the 7th, 1888, by Guillemard, near Ayia Napa, at the south-eastern extremity of the island.

121. Sylvia melanocephala (Gmel.).

The Sardinian Warbler is probably a visitor on migration, though no doubt some winter in the island. Lord Lilford considered it uncommon and very local, and he only noticed it in the Karpas; Guillemard found a few, but secured two only, near Limassol, in March; Glaszner sent several to Madarász, collected in various localities in September, October, November, and February, and has shown me a specimen taken on March the 24th, 1905.

122. **Sylvia atricapilla** (Linn.).

The Blackcap is an exceedingly common migrant, arriving during March; some stay and nest, but the great majority quickly move north. The return passage takes place in September and the beginning of October.

My first note of its appearance is the 6th of March, but this is very early and I do not think that the bulk arrive until towards the end of that month, when there is usually a heavy rush of migrating vernal arrivals. Those which do not remain do not stay later than the middle of April. Glaszner took specimens in March, April, August, September, and October; and Mr. Baxendale, Horsbrugh, and I found the bird in plenty even up to the 28th of April, 1909. Horsbrugh and I discovered it nesting on the Kyrenia Hills early in May, and on the 1st found a nest with young—not remarkably early, in view of the advanced state of summer which obtains in Cyprus at that date. My first record of the return migration is the 5th of September; but this is again early, as the bulk do not reappear until towards the end of that month; by the middle of October or thereabouts they have again passed on south, and I have not noticed any during the winter months. Perhaps the chief interest which locally attaches to this bird lies in the fact that it is the species which forms the main strength of the "Beccaficos," the capture and sale of which have for so many centuries formed quite a small trade in the island. Until quite recently much uncertainty existed as to the actual species which was the victim of this petty commerce: the early writers mostly seem to have thought that it was the Ortolan, but Lord Lilford was assured that it was the Garden-Warbler. Glaszner pointed out to Madarász that the bird utilized was the "Blackcap," and explained that, naturally, other species were sometimes captured and made use of with it, such as *S. melanothorax*, *S. melanocephala*, *S. hortensis*, and, in the mountainous districts, even the Great and Coal Titmice. I have no doubt that he is right, but though I took the trouble to examine perhaps two hundred of these birds taken in September 1908, I found them all Blackcaps. The capture is effected in various parts of the island during the autumn migration, but chiefly in the district lying between Larnaca and Famagusta. The birds are caught with bird-lime, and some idea of their abundance may be gathered from the fact that a single peasant will sometimes take as many as ten or twelve dozen during the day. They are either sold fresh, unplucked, at about twenty for a shilling, and are eaten as one would eat Larks, or preserved, undrawn, in the wine of the country and served as a savoury or light entrée, and are certainly in either case extremely palatable.

123. Sylvia orphea Temm.

Lord Lilford obtained a male Orphean Warbler near Limassol on April the 15th, 1875. It does not seem to have been met with by Guillemard; but Glaszner sent six to Madarász, taken near Larnaca in March, April, and August. I have never seen a specimen from Cyprus, but should imagine that those found in the island ought to belong to the Eastern form, *S. jerdoni* (Blyth). It is no doubt frequently confused with the Blackcap.

125. Sylvia rueppelli Temm.

Rüppell's Warbler appears to be mainly a spring and autumn migrant and not very uncommon. It was not met with by Lord Lilford, but Guillemard obtained specimens near the Limassol salt-lakes in March 1887. Glaszner sent a considerable number to Madarász collected in various localities in March, but captured one in October. Mr. Baxendale sent me a specimen shot near Papho on the 1st of April, 1909, where he had observed it in some numbers, and I have seen others taken by Glaszner on the 6th of April and the 12th of May. I should think that there can be little doubt that it nests in the island.

126. Sylvia melanothorax Tristram.

The Palestine Warbler was only described by Tristram two or three years before Lord Lilford, unaware of that fact, found the species fairly common in Cyprus. Lord Lilford first noticed it at the north-east corner of the island on April 27th, but afterwards observed it in more or less abundance in the scrubby uncultivated grounds near the sea in all the localities which he visited. Pearse sent him many specimens. Guillemard found it, evidently arriving on migration, at the Limassol promontory on March 7th, and shot it afterwards in many different parts of the island from sea-level up to 2000 feet or more on the hills; he did not find it common on the northern side of the Kyrenia range, but met with it in December on the Mesaoria plain on his second visit. Miss Bate found it common in summer on the Troödos range at 4600 feet. Glaszner sent to Madarász alone more than a hundred specimens, taken at all times of the year and from all parts of the island.

The species is evidently in the main a summer visitor, though a considerable number remain throughout the winter. Strangely enough, the nest and eggs have not been, so far as I am aware, yet taken or observed.

To what has already been written on this bird in Cyprus I can add nothing. I have seen a fair number, and can only suggest that it nests in May.

Regulus sp. inc.

In March 1887 Guillemard observed a *Regulus* (which he could not clearly identify) at Episkopi, near Limassol. Probably it was *R. ignicapillus* (Brehm), which is common in the Taurus range.

136. Phylloscopus trochilus (Linn.).

The Willow-Wren is another spring and autumn visitor. It was included in Sibthorp's list: he took it on his ship on April 4th. Lord Lilford found it common, but not nearly so abundant as the Chiffchaff; Pearse obtained several specimens in October; Guillemard does not mention it in his two articles. Glaszner sent Madarász seven specimens taken near Larnaca and on the Troödos range in September and October. It is rather remarkable that although I have been extremely familiar with this species from boyhood I have never heard it in Cyprus, and the only occasion when I have seen it was in early May of 1909 at Nicosia in some numbers in the Botanical Gardens in company with many other small Warblers, most of which I was unable to identify.

137. Phylloscopus sibilatrix (Bechst.).

The Wood-Wren appears to be a spring and autumn visitor, but a few individuals probably stay during the winter. Lord Lilford found it common in April and May in the gardens and fruit-orchards. Guillemard observed a few in mid-April near Famagusta and appears to have obtained examples; Glaszner sent Madarász a male taken near Larnaca on May the 6th, 1901. I have never heard this species in Cyprus, but I saw a few examples near Nicosia on April the 14th, 1909. On the 29th of November, 1908, I caught in my house a live male.

138. Phylloscopus bonellii (Vieill.).

Bonelli's Warbler was found by Lord Lilford not uncommon in April and May in gardens and on the lower slopes of the hills in the Karpas district. Guillemard does not mention the species in his articles, but apparently obtained specimens. Glaszner sent two to Madarász taken at Larnaca in April and July. Madarász thinks that Lord Lilford is wrong in expressing the opinion that the Chiffchaff nests in Cyprus, and considers that Bonelli's Warbler is really the species concerning the breeding of which Lord Lilford had received information. However, Bonelli's Warbler is evidently a spring and autumn migrant in any case.

139. Phylloscopus collybita (Vieill.)

The Chiffchaff is a common visitor on the spring and autumn migrations and a good many remain throughout the winter. Although Lord Lilford states that he had reason to believe that it breeds in Cyprus, I have no definite evidence of its doing so.

Lord Lilford found it very abundant on the vernal migration; Guillemard noticed a small party on January the 5th, and secured one of them, and he obtained the first spring arrivals on the 8th of March; Glaszner sent Madarász specimens taken in January, February, March, and October.

The Chiffchaff is to be seen in Nicosia throughout the winter; a few of them frequented my garden in the cold weather of 1908 and 1909, from mid-October till the beginning of April. The first few warm days brings them into song and between the 14th of February and March the 25th, 1908, and again between the 1st of March and April the 2nd, 1909, their note was constantly to be heard. On March the 6th, 1908, and on March the 12th, 1909, their numbers were largely increased by, I presume, the spring migrants. After the first few days of April their song is no longer heard and they all seem to disappear about that time, my actual latest date of observation of the species being the 6th of April.

160. Hypolais pallida (Hempr. & Ehr.).

The Olivaceous or Pallid Warbler is a very common summer visitor and is to be found all over the island. It arrives about the end of April and sings vigorously till, at any rate, the end of July. It leaves about the end of September. It is, without doubt, by far the commonest Warbler of Cyprus. It nests in May and early June—I have notes of clutches from May the 8th to June the 10th—and lays sometimes three or, more often, four eggs.

Lord Lilford first identified the species in the island. Glaszner has taken specimens in September: we all found it in abundance.

165. Aëdon familiaris (Ménétr.).

The only record from Cyprus, of which I am aware, of the Grey-backed Warbler is that of a female obtained by Glaszner on August the 28th, 1901, and sent by him to Madarász.

168. Acrocephalus streperus (Vieill.).

Lord Lilford met with the Reed-Warbler on his visit and regarded it as not very abundant; he took specimens towards the end of April in the Karpas district; Pearse met with it in October.

Müller mentions the receipt of two clutches, each of three eggs, taken on May the 22nd. Glaszner obtained one bird near Larnaca on August the 26th, 1901. None of us have yet come across this species, but it would appear to be a summer visitor, though occurring chiefly at the spring and autumn migrations.

170. ACROCEPHALUS ARUNDINACEUS (Linn.).

Acrocephalus turdoides Gould, B. O. U. List, p. 19.

Lord Lilford doubtfully included the Great Reed-Warbler in his list on the strength of the remains of what was considered to be a specimen of the bird found in the stomach of a Viper sent to him by Pearse.

It was not met with by Guillemard, but Glaszner sent eight specimens to Madarász, obtained near Larnaca in September, October, and November. Mr. Baxendale informs me that he believes that this species occurs at the end of March near Papho, and there are a few suitable localities in that neighbourhood where it is possible it might nest. However, so far, it is only known to us as a visitor on the spring and autumn migrations.

175. ACROCEPHALUS SCHŒNOBÆNUS (Linn.).

Acrocephalus phragmitis (Bechst.), B. O. U. List, p. 20.

Guillemard met with and obtained the Sedge-Warbler near Larnaca salt-lake in the early half of April 1887; and Lord Lilford states that the only specimens in his Cyprus collection were two collected by Guillemard and dated, from near Larnaca, as of May the 20th of that year, though it may be remarked that on that day Guillemard was at another Larnaca close to Kyrenia on the other side of the island. Apparently the bird was not taken by Glaszner, nor have I observed it; but Horsbrugh came across a few individuals near the Acheritou reservoir in early April, though, as he did not obtain a specimen, the identification is not so satisfactory as would otherwise have been the case.

193. LOCUSTELLA LUSCINIOIDES (Savi).

Lord Lilford shot a single specimen not far from Larnaca on April 21st, 1875. I shot a male on some reedy banks of a small watercourse at Nicosia on April the 13th, 1909. I know of no other records. Until the reed-beds which exist in a few places in the island are thoroughly explored by a competent ornithologist in May, very little can be said with certainty as to the status of quite a number of birds which have hitherto been only casually reported.

194. Cettia cettii (Marm.).

Cettia sericea (Temm.), B. O. U. List, p. 22.

Lord Lilford heard Cetti's Warbler once near Limassol during his visit; Pearse obtained one example on November the 11th, 1878, and Guillemard another at Lefka (not far from the sea) on May the 23rd, 1887.

These are the only local records with which I am acquainted.

199. Cisticola cursitans (Franklin).

Lord Lilford considered the Fantail Warbler to be common in the wheat-lands bordering the marshes; Guillemard found it abundant, in the early part of April 1887, near the Larnaca salt-lake; and Glaszner sent a specimen, taken near Larnaca on October the 19th, 1901, to Madarász. I have on several occasions in April seen a few in the close vicinity of Nicosia, and Mr. Baxendale and Horsbrugh found the bird fairly common in the Papho district from the 6th to the 25th of May, 1909. Its precise status in the island I have not yet been able to determine, but I suspect that it is a resident.

232. Parus major Linn.

The Great Titmouse is a common resident. It was first noticed by Lord Lilford, and Müller mentions clutches of eggs taken on April the 23rd and May the 17th. Guillemard found it extremely common and generally distributed; while Glaszner sent a large series to Madarász, taken in various localities in every month of the year except July and December, and has obtained fledglings in April, May, and June.

To this I have little to add. I have had this bird in my garden at Nicosia from October to June and have seen it wherever I have been in the island. At Nicosia, young on the wing were noticed by me on April the 27th, 1909; Horsbrugh found several nests in the hills, both with fresh eggs and young, in early May, and obtained the bird both in the plains and on the summit of Troödos. I propose to deal with the variations in plumage to which this species is locally subject under the head of the next species.

233. Subsp. PARUS APHRODITE Madarász.

From the series of skins of Great Titmice sent to him by Glaszner, Madarász separated five, from which he described *Parus aphrodite*, a form apparently intermediate in appearance between *Parus minor* Temm. & Schlegel—the Japanese Titmouse—and *Parus major* Linn. In addition, however, to the separated *Parus aphrodite*, Madarász found some fifteen specimens which he regards as crosses between *Parus major* and *P. aphrodite*: these are smaller than typical *P. major* and somewhat paler on the breast. The specimens of *P. aphrodite* were taken in February, March, May, and October, but the subspecies is evidently resident. Whether in Cyprus *P. major* is throwing off a form approximating to *P. minor*, or whether, as with its population, Cyprus is in the case of these birds the meeting-place of east and west, it is hard to say. One can only surmise, in view of the stationary character of the Great Titmouse and of the great numerical superiority of the typical *P. major*, that, if the latter view be correct, it is remarkable that such a form as *P. aphrodite* is still in existence. If, on the other hand, the former is the right theory, it is again remarkable that the form is apparently uncommon, unless the offshoot is of recent development.

Personally I have never handled a sufficient number of specimens of Cypriote Great Titmice to enable me to comment usefully on the validity of Madarász's conclusions. The nests and eggs of local Great Titmice which I have seen differ in no way from those of the typical British species. The note of the Great Titmouse in Cyprus seems weak.

239. Subsp. PARUS CYPRIOTES Dresser.

The existence of the Coal Titmouse in Cyprus was known to Sibthorp, who shot it on Troödos in 1787. Its name appears, of course, in Unger and Kotschy's list. Lord Lilford did not visit its haunts, but received specimens from Pearse—from the southern range,—which were then, as up to Guillemard's visit was the case, only regarded as *P. ater* or a dark form of that species. In 1887 and 1888, however, Guillemard obtained a considerable number of specimens, from which, in the former year, Dresser described the bird as *P. cypriotes*. Glaszner sent to Madarász alone two hundred examples and took nests and eggs. It is a resident, confined to the coniferous-tree-bearing areas of the southern mountains, and seldom met with except at a considerable elevation. To this I have little to add. I observed it frequently in the summer on Troödos, and Horsbrugh obtained specimens quite low down in the forest between Karavastasi and Kambos and found two nests at the latter place (*circa* 3200 feet) in early May 1909; higher up he found another with unfledged young on the 11th of May, while he saw and obtained specimens and found a fourth nest in early June on the summit. His first nest was discovered in a hole in a mulberry-tree close to the ground; the second in a cavity in a caroub-tree about fifteen feet up; the third in a hole in a bank behind a hut; of the fourth I have no particulars. Such eggs as I have examined do not appear to me to differ from those of *P. ater*. The bird's note seems very much feebler than that of its English relative.

260. Parus cæruleus Linn.

The only record of the Blue Titmouse appears to be that of Guillemard, who observed a single specimen in the first week of March 1887, in the Larnaca district.

286. Sitta syriaca Ehr. (?).

Unger and Kotschy place the Rock-Nuthatch under this name in their list, but on what authority I do not know. No one since has been able to verify their record.

The form *Sitta neumayeri* Michah., is, I should imagine, more likely to wander to the island than any other *Sitta*.

287. Certhia familiaris Linn.

Certhia familiaris dorothea Hartert.

The presence of a Tree-creeper in Cyprus seems to have been first observed by Guillemard, who found it tolerably abundant on the heights of Troödos on both his visits (1887 and 1888). Miss Dorothy Bate, who, during her stay in 1901 and 1902, took a series of specimens in the same locality, drew attention to their similarity to the subspecies from Asia Minor, *C. familiaris harterti* Hellm., and I believe that Dr. Hartert has designated the Cypriote form by the trinomial given above. Glaszner sent over forty specimens to Madarász alone. It would be out of place here to enter into any lengthy account of the characteristics which are stated to distinguish the Cypriote form, as they have been dealt with in considerable detail elsewhere by Miss Bate and Madarász. The bird is a resident, but is restricted to the coniferous forests of the southern mountains and, so far as I am aware, to the higher altitudes. It is not very common, but I saw a few in the neighbourhood of the Troödos hill-station in the summers of 1908 and 1909. Horsbrugh observed it in fair numbers in his journey through the range in May and June; he obtained specimens on the summit and found five fledgings already out of the nest on the 3rd of the latter month, but observed a pair still building in the roof of a hut in another locality on the following day.

I have not yet procured the eggs.

290. Troglodytes parvulus Koch.

Anorthura cypriotes Bate, Bull. B. O. C. xiii. p. 51.

Troglodytes cypriotis Bate, Ibis, 1903, p. 575.

Guillemard, who did not mention the Wren in his articles, was, nevertheless, the first to record this species in Cyprus, bringing back two examples from the Troödos mountains. Miss Bate, who obtained a few in the same locality during her visit, described it as a new species, and gave an accurate account of its habits and distribution. Madarász sent three to Glaszner, also collected in the same neighbourhood. The Wren is a resident, but is confined to the forests of the southern range, and is more common than elsewhere on the highest portions. I found it in plenty in the neighbourhood of the hill-station near the summit of Troödos, singing gaily, from the commencement of July (the date of my arrival there) until the end of September. It breeds in April and May, but though Miss Bate heard of a nest on the southern slopes, I am not aware that its nidification and eggs have been hitherto described. Mr. Nicolls, whose duties cause him to visit Troödos in early spring, wrote to me: "I have found the nest of this bird almost every spring on Troödos, although, as a rule, too late to take the eggs. I have nearly always found the nest fixed in the side of a road-cutting, sometimes well, sometimes poorly concealed. It is built of dead bracken and moss and lined with fine material: it is exactly similar in size and shape to that of the English Wren, only apparently the bird has not that facility for local disguise which the English species has."

In 1909, on the 27th of April, Mr. Nicolls found two nests at Karbouna (about 4000 feet), one containing two and the other seven eggs; the former was made of dark moss placed against a white rock background, and the latter of the same material against a dark rock background. Mr. Nicolls brought me one egg; it was rather glossy, pure white, and measured ·7 × ·51 inch.

A few days later Mr. Nicolls found a third nest built under the verandah of Government House on Troödos, between the rafter and the corner wall.

Horsbrugh met with the Wren in some numbers during his stay in the forest, *i. e.*, from May the 10th to 30th, 1909, and obtained nests, eggs, and birds. The first nest he discovered on May the 12th at an altitude of between 3000 and 4000 feet on the western side of the Troödos range, but it was empty; it was built on the crest of a bank. On the same day he found a second, not far off, in the side of a bank, with four well-fledged young. On the 29th, on Troödos, he took a nest with five fresh eggs from a cleft in a rock close to a stream at an altitude of about 5200 feet. These eggs are rather small, their average size being ·647 × ·511 inch:

one is pure white, two have only two or three very small pale rusty spots, while the remaining two are slightly spotted. Horsbrugh brought back the first and third nests, one being almost entirely composed of moss, and the other of dry bracken.

To the ordinary observer the Cypriote Wren appears only rather darker than the typical English bird, but one of the distinctions is, according to Madarász, the great length of the bill in the local form.

293. Motacilla lugubris Temm.

Sibthorp in his list includes *Motacilla ficedula* as well as *Motacilla alba.* I can only suppose that by the latter name he intended to designate the Pied, and by the former the White Wagtail. But if this is so, no other observer has confirmed the appearance of the Pied Wagtail in Cyprus.

Even Unger and Kotschy discreetly omit it from their catalogue.

298. Motacilla alba Linn.

The White Wagtail is a very common winter visitor, arriving about the beginning of October and leaving towards the middle of April. It was first noticed by Sibthorp, and Lord Lilford found it tolerably common near Larnaca and Famagusta about the end of April. It was observed by Guillemard in January and March; and has also been procured by Glaszner in February. Personally, I have found the species quite abundant during the period mentioned above, as a rule in small parties, but often in scores amongst the flocks of sheep and goats. It is possible that a few may nest in the island, as at the end of May of this year (1909) I saw at close quarters a small party of three Wagtails which I could not place except perhaps as young of this species.

302. Motacilla melanope Pall.

The Grey Wagtail is a winter visitor to Cyprus, arriving towards the middle of October and leaving towards the middle of March. It is not uncommon. It was not met with by Lord Lilford, but Pearse obtained it in November, and Guillemard in January: Glaszner has taken it on the Troödos range in September and October.

Personally, I have had it under constant observation in Nicosia from October the 13th to March the 9th, but I have seldom seen more than half a dozen at a time near the water-tanks, pools, and open aqueducts which it frequents.

305. Motacilla flava Linn.

The Blue-headed Wagtail is a common spring and autumn visitor, arriving towards the end of March, leaving towards the end of May, and returning on passage in early October. It is mentioned by Sibthorp. Lord Lilford found it common in all moist places in April and May, Guillemard obtained it on March the 20th, and Glaszner on October the 6th. Mr. Baxendale, Horsbrugh, and I found it frequently in many localities from March the 26th to May the 24th, and shot several examples.

307. Motacilla melanocephala Licht.

The Black-headed Wagtail is a common spring and autumn migrant, arriving and leaving much about the same time as the preceding species. Lord Lilford found it common in May in similar localities to those which *M. flava* frequents, Müller mentions a specimen received by Schlüter which was taken in spring, and Glaszner has obtained it at the end of March.

Horsbrugh and I found it quite abundant in many localities from the end of March till about the end of April, often consorting in small flocks of thirty or more with *M. flava*. We obtained a number of specimens.

313. Anthus pratensis (Linn.).

The Meadow-Pipit or Titlark is at any rate a common visitor on the spring and autumn migrations, and a good many individuals are to be found in winter. I have no evidence that it nests in the island. Lord Lilford found it not uncommon in April near the coast; Pearse obtained it in November, Guillemard in January, February and March; Glaszner in November and February.

I shot a male in January at Morphou; and Horsbrugh and I found a good many near Nicosia from March the 12th to April the 18th, 1909, and obtained some specimens.

But Horsbrugh did not meet with it on the hills in May, and, though no proper attention has yet been paid to this group in the island, I am very doubtful whether any Meadow-Pipits remain in Cyprus during the summer.

315. ANTHUS TRIVIALIS (Linn.).

The Tree-Pipit is also certainly a visitor at the spring and autumn migrations. I think some individuals may remain during the winter, but I do not believe that it breeds in the island. Lord Lilford found it not uncommon near Larnaca in the latter half of April, and Guillemard noticed it, evidently in some numbers, at the beginning of May. Glaszner has procured it in April, September, and October. My only note of this bird in the island is of the 1st of March, 1908, on which date I observed a few of what I took to be Tree-Pipits amongst the trees in the moat at Nicosia.

317. ANTHUS CERVINUS (Pall.).

The Red-throated Pipit is a visitor on the spring and autumn migrations. Lord Lilford found it not uncommon in the plains near the coast in April and May, and thought it more common than *A. pratensis.* Guillemard noticed it in small flocks of twenty or thirty on the marshy grounds near Famagusta at the end of April. It does not seem to have been met with by Glaszner; but Horsbrugh and I took one specimen on the 28th of March, 1909, and saw numbers and obtained a male and female on May the 2nd, near Nicosia.

318. ANTHUS SPIPOLETTA (Linn.).

The Water- or Alpine Pipit was first noticed by Sibthorp, who caught a specimen on his vessel whilst off Cyprus on April the 3rd, 1787. The species was, of course, included in Unger and Kotschy's list. Lord Lilford obtained a female near Larnaca on April the 21st, 1875, in nuptial plumage, and Guillemard a male in winter dress near Limassol on January the 5th, 1888. I am not aware that the bird has been obtained by Glaszner. Horsbrugh shot a male on March 23rd at Acheritou, and Mr. Baxendale sent me another killed on April the 18th (1909) at Papho. I suppose that it is a visitor on the migrations, and perhaps winters in the island.

323. Anthus campestris (Linn.).

The only record of the Tawny Pipit from Cyprus with which I am acquainted is that of a specimen shot near Larnaca by Lord Lilford on April the 16th, 1875. It is possibly a resident.

In concluding this very inadequate account of the Pipits, I can only add that, though my recollection is full of remembrances of seeing Pipits in many places in the island, my note-book is practically blank regarding them, an omission which I shall endeavour to rectify.

330. Pycnonotus xanthopygus (Hempr. & Ehr.).

The only record of the Palestine Bulbul hitherto is that of Guillemard, who, in mid-April 1887, observed near Larnaca at close quarters a specimen of what he was satisfied was this species. It does not seem to have been met with by any other observer. I have found it a regular but not abundant visitor in spring, arriving about the beginning of May and staying, according to my observation, only about three weeks, my first date being April 30th and my last May 22nd. I have frequently seen three individuals together in my garden at Nicosia, and Horsbrugh and I this spring (1909) noticed them there from April the 30th to May the 18th. Mr. G. Wilson also saw the bird on May the 5th, 1909, in two localities close to the capital. I have seen it in captivity once in the island, but on enquiry heard that the specimen came from Smyrna. It is no doubt also an autumn migrant.

335. Oriolus galbula Linn.

The Golden Oriole is a fairly common visitor in spring and autumn. It was noticed by Sibthorp as not uncommon. Lord Lilford was surprised at observing it only once. Müller mentions three spring specimens; and Guillemard, who only observed one on his first visit, saw many between Troödos and Papho in April 1888, but was told that it was a year in which it was exceptionally abundant. Glaszner has collected a few in April and May, and shewed me a female obtained on October the 8th, 1905. I observed a few in April and May of 1908 and 1909; and Horsbrugh and I obtained or saw about a dozen birds in 1909 from the 23rd of the former to the 14th of the latter month. I never heard of this species nesting in Cyprus; but Mr. G. F. Wilson has notes of its occurrence as early as August the 23rd (1903) and August the 27th (1908), and has also seen it at the end of September.

350. LANIUS MINOR Gmel.

As Madarász remarks, it is certainly noticeable that the Lesser Grey Shrike does not appear to have been recorded by anyone prior to Glaszner, in view of the fact that it is by no means an uncommon visitor in spring and autumn. Glaszner sent to Madarász some twenty-two adult and immature specimens taken at Larnaca in August and September, and he considers it quite abundant at that season. Horsbrugh and I saw and obtained specimens in several localities at the end of April and beginning of May 1909, but in my opinion the bird is not very common, and we never saw more than three or four in a day, and not quite a dozen in all. My first date was April the 24th and my last May the 3rd, so it does not seem to stop long.

352. LANIUS COLLURIO Linn.

I cannot find any clear reference to Shrikes prior to Lord Lilford, though Sibthorp in his journal states that "the two species of *Lanius* confine themselves to the pine-woods with the Black Titmouse." He does not, apparently, include any *Lanius* in his list, and I am inclined to think that he meant *Loxia* (*vide infrà*, no. 495).

Lord Lilford did not meet with the Red-backed Shrike, but Pearse obtained specimens in November, while Guillemard found it only in the north of the island and on Troödos, at the latter place in early June. Glaszner sent a good many examples to Madarász taken in August and September. I obtained a specimen (a male) on the 27th of July, 1908, and Horsbrugh and I saw and obtained several in the first week in May 1909, near Nicosia. It is a visitor on spring—and autumn—migration, and possibly some individuals may nest in the pine-forests in the hills.

353. Lanius isabellinus Ehrenb.

The Isabelline Shrike is only recorded from Cyprus, so far as I am aware, by Madarász, who received a female from Glaszner, taken near Larnaca on November the 8th, 1902.

369. Lanius auriculatus, Müll.

Lanius pomeranus, Sparrman, B. O. U. List, p. 38.

The Woodchat-Shrike was met with once only by Lord Lilford, one of whose companions obtained a male in the Karpas district on April the 26th, 1875. It does not seem to have been noticed by Pearse or Guillemard; but Glaszner sent quite a young bird to Madarász, unfortunately without data, which the latter is convinced must have been bred in the island. Horsbrugh and I saw a few examples in April 1909 and obtained specimens; and Mr. Baxendale sent me up from Papho a male and female, both taken in the same month. Our first note of the bird was on the 8th and our last on the 26th of April. No doubt it is in the main a visitor on the spring and autumn migrations, and apparently may sometimes nest in the island.

370. Lanius nubicus Licht.

The Masked Shrike is a very common summer visitor, arriving at the end of March and leaving at the very end of September or early October. It nests abundantly in the hills, and is found in numbers in the highest parts of the mountains. It seems to have been first noticed in the island by Guillemard, who found it both on the north side of the northern range and in a few places on the southern; he brought back a good series of skins and some nests and eggs. Glaszner also collected a large number of adult and juvenile specimens from March to September. Horsbrugh in 1909 noticed the first arrival on March the 29th at the Acheritou reservoir, and from that date until he left the island in June procured a number of specimens and plenty of nests and eggs in the hills. He took a much incubated clutch of seven eggs near Kambos on May the 10th, and found young in a nest on the Troödos summit on June the 1st, where the bird was very abundant. But he also took fresh eggs as late as the 12th of May, and on the 9th found a nest with only one egg. Some of the eggs are very handsome, and the nests are in several instances almost entirely composed of rough cotton or woollen refuse or discarded cord and thread. On the 31st of May Horsbrugh shot a Jay on Troödos which, whilst struggling on the ground, was attacked and mobbed viciously by four Masked Shrikes.

[To be continued.]

XXX.—*Supplementary List of the Birds of the Alexandra District, Northern Territory, S. Australia.* By Collingwood Ingram, F.Z.S., M.B.O.U.

In the 'Ibis' 1907 (p. 387) I described a collection of birds from Alexandra, a cattle-station in the Northern Territory of South Australia. They were all obtained by Mr. William Stalker, who consigned the specimens to England as soon as they were ready for transit. Of three cases so despatched, two arrived safely within the year: the third, and last, only reached its destination a few months ago! The birds contained in the last case have been carefully examined and named by Mr. Gregory Mathews, to whom I am indebted for the following detailed list, which I now publish as a supplement to my first paper. Nineteen species are thereby added to the birds of Alexandra, making a total of a hundred and ten. This may be considered a fairly complete list of the birds occurring in the district under notice, as Mr. Stalker was occupied for nearly two years in making the collection. The nomenclature of the list follows that of Mathews' recently published "Handlist" ('Emu,' vol. vii. Suppl.).

1. **Fulica australis** Math. Handl. no. 64.

♂. 10.3.06.

Eyes brick-red; bill pale bluish grey; feet steel-grey.

Native name "Hago-ray-a-rand."

2. **Hydrochelidon hybrida** Math. Handl. no. 119.

♂? 26.1.06.

Eyes brown; feet bright red; bill reddish purple.

Native name "Eerin-gerena."

3. **Erythrogonys cinctus** Math. Handl. no. 146; Ingram, Ibis, 1907, p. 393.

♂ ♀. 2.2.06.

Eyes brown; feet black; bill bright red, with the tip black.

These were a pair.

4. **Lobivanellus miles** Math. Handl. no. 148.

♀ ♀ ♀ ♀. 7.3.06.

Eyes yellow; feet bright red; bill yellow to grey.

Native name "Dardango."

5. **Ægialitis melanops** Math. Handl. no. 158; Ingram, Ibis, 1907, p. 393.

♂ ♂ ♀ ♀. One pair from the Upper Playford R., 17.3.06. One pair from Alexandra, 7.2.06.

Eyes brown; eyelid bright scarlet: feet cream-coloured; bill orange with tip black.

[At a distance of from fifteen to twenty yards these birds are almost invisible on the mud.]

6. **Recurvirostra novæ-hollandiæ** Math. Handl. no. 163; Ingram, Ibis, 1907, p. 393.

♂ ♀. 1.2.06.

Eyes dark red; feet bluish; bill black.

7. **Rostratula australis** Math. Handl. no. 186.

♀. 2.4.06. Brunnett Creek.

Eyes hazel; feet blue-grey; bill yellow-brown.

Shot on the edge of a rocky waterhole.

8. ANTIGONE AUSTRALASIANA Math. Handl. no. 193.
♀. Jan. 06.

This bird shews signs of having been sitting for some time.

9. CARPHIBIS SPINICOLLIS Math. Handl. no. 195.
♂. 9.5.06. Buchanan River.
Eyes brown; feet pink; bill black.
[Lives on water-snails and crabs, &c.]

10. PLEGADIS FALCINELLUS Math. Handl. no. 196.
♂ immature. 7.3.06. Buchanan River.
Eyes brown; feet black; bill black.
Native name "Cabalan."

11. PLATALEA REGIA Math. Handl. no. 197.
♂. 26.1.06.
Eyes red-gold; feet and bill black.
Native name "Narigodinga."
♂ ♀. 29.6.06.
Eyes brown; feet and bill black.
♂. 9.7.06.
Eyes dark red; feet and bill black.

These birds were feeding on small beetles and had immature cattle-ticks on their heads.

12. NOTOPHOYX NOVÆ-HOLLANDIÆ Math. Handl. no. 204.
♂ ♀. 3.2.06.
Eyes pale yellow-grey; feet pale yellow; bill black.

13. NOTOPHOYX PACIFICA Math. Handl. no. 205; Ingram, Ibis, 1907, p. 394.
♂. 21.7.06.
Eyes pale yellow; feet dark olive; bill black.
In front of and above the eye pale green-yellow.

14. NYCTICORAX CALEDONICUS Math. Handl. no. 210.
♂ immature. 16.6.06.

Eyes bright lemon-yellow; feet pale green; bill black above, greenish yellow below.

[Food, small crabs. This and other water-birds were all very poor in condition about this time.]

15. Astur fasciatus Math. Handl. no. 208; Ingram, Ibis, 1907, p. 396.

♂ immature. Feb. 06.

Eyes pale yellow; feet dark brown; bill bluish brown.

16. Uroaëtus audax, Math. Handl. no. 262; Ingram, Ibis, 1907, p. 397.

♂. 30. 6. 06.

Eyes yellowish brown; feet whitish; bill grey to blue at the tip.

17. Milvus affinis Math. Handl. no. 268; Ingram, Ibis, 1907, p. 398.

♂. 28. 6. 06.

Eyes golden yellow; feet bright yellow; bill dark blue.

18. Hieracidea orientalis Math. Handl. no. 279; Ingram, Ibis, 1907, p. 398.

♀. 3. 4. 06.

Eyes dark brown; feet whitish; bill dark indigo-blue.

♀ immature. Feb. 06.

Eyes blue; feet bright blue; legs grey; bill blue-grey.

19. Calyptorhynchus macrorhynchus Math. Handl. no. 316.

♂. 19. 3. 06. Upper Playford River.

♀. Alexandra Springs, Feb. 06.

Feet black; bill blue-grey.

[Native name "Gundina." These birds come over in flocks of from three to twelve after rain.]

20. Podargus phalænoides Math. Handl. no. 377.

♂. March 06.

21. Halcyon pyrrhopygius Math. Handl. no. 390; Ingram, Ibis, 1907, p. 401.

♀. 30. 4. 06.

Eyes brown; feet black; bill black, with base of lower mandible grey.

22. Halcyon sanctus Math. Handl. no. 391.

♂. 2.2.06.

Eyes brown; feet black; bill black, with base of lower mandible cream-coloured.

23. Merops ornatus Math. Handl. no. 396; Ingram, Ibis, 1907, p. 401.

♂. 29.3.06. Cliff Creek.

Eyes scarlet; feet and bill black.

24. Cuculus inornatus Math. Handl. no. 405.

♂. 17.3.06. Upper Playford River.

Eyes brown; feet grey; bill dark olive. [Native name "Ono-lo."]

25. Petrœca picata Math. Handl. no. 447; Ingram, Ibis, 1907, p. 403.

♂ adult; ♂ immature. Feb. 06.

26. Pteropodocys phasianella Math. Handl. no. 503.

♂. 10.5.06.

Eyes pale yellow; feet blackish grey; bill black.

This bird was feeding on grasshoppers. [Native name "Mar-ou-wa."]

27. Pomatostomus rubeculus Math. Handl. no. 532; Ingram, Ibis, 1907, p. 405.

♀. 23.3.06. Upper Playford River.

Eyes pale yellow; feet black; bill black, culmen grey.

28. Artamus florenciæ Math. Handl. no. 632; Ingram, Ibis, 1907, p. 409.

♂ ♂. March 06.

Eyes brown; feet grey; bill bluish horn-coloured, tip black.

29. Artamus minor Math. Handl. no. 635; Ingram, Ibis, 1907, p. 408.

♀. Immature. Feb. 06.

30. Gymnorhina tibicen Math. Handl. no. 647.

♀. 30.4.06.

Eyes hazel; feet dark blue; bill blue-grey, tip darker.

31. Cracticus picatus Math. Handl. no. 655; Ingram, Ibis, 1907, p. 410.

♂. 17.3.06. Upper Playford River.

Eyes brown; feet dark grey; bill pale grey-blue, tip black.

32. Pachycephala rufiventris Math. Handl. no. 674.

Sex? 26.1.06.

Eyes brown; feet and bill black.

[Native name "Doing-go."]

33. Climacteris melanura Math. Handl. no. 701; Ingram, Ibis, 1907, p. 412.

♀. 28.3.06. Cliff Creek.

Eyes brown; bill and feet black.

[These birds feed on a species of small black ant, catching them on the trees.]

34. Dicæum hirundinaceum Math. Handl. no. 722; Ingram, Ibis, 1907, p. 412.

♂. 8.5.06.

Eyes brown; feet black; bill black.

[This bird was feeding on mistletoe fruit. The intestines were short and large, apparently to allow for the passage of the large seed which retains much of the sticky covering.]

Native name "Chi-chi."

35. Munia pectoralis Math. Handl. no. 836; Ingram, Ibis, 1907, p. 415.

♂. Feb. 06. Bore Creek.

Feet brown; bill dark blue.

36. Corvus bennetti Math. Handl. no. 873.

♂. Nov. 05.

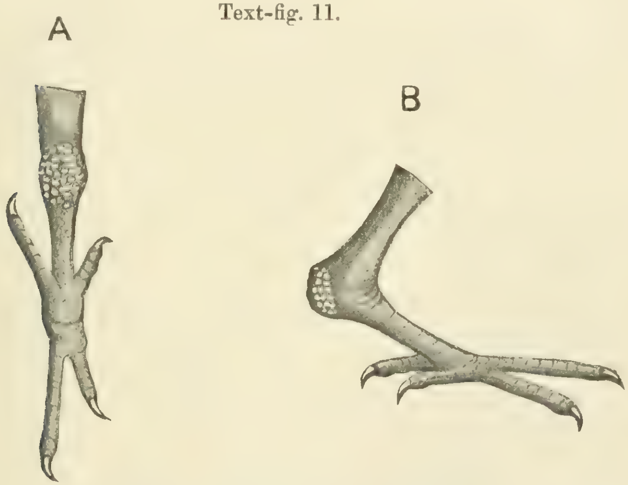
Eyes white; feet and bill black.

XXXI.—*On the Foot-pads of the Young of the Green Woodpecker.* By Charles Stonham, C.M.G., F.R.C.S.

(Text-figure 11.)

In 'The Ibis' for 1890 (p. 411) there is a note, with two woodcuts, by Dr. Günther, drawing attention to the tuberculated thickening of the skin which covers the heel of the young Wryneck (*Iynx torquilla*). Dr. Günther points out that this modification must be regarded as an accessory means of locomotion. I have for some time endeavoured to obtain a young Woodpecker for purposes of comparison and have succeeded this year.

Text-fig. 11.



Foot of nestling Green Woodpecker.
A. Left foot, shewing plantar surface. B. Do., giving lateral view.

The accompanying text-figure shews that in the Green Woodpecker (*Gecinus viridis*) there are heel-pads precisely like those described by Dr. Günther in the Wryneck. I have not been able to obtain nestlings of either the Great or the Lesser Spotted Woodpecker, but it is practically certain that they also possess these pads when quite young *. The drawings, by Miss L. M. Medland, are of life-size.

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* [The same structure has been stated to exist also in a Barbet (*Cyanops asiatica*). See Pycraft, Bull. B. O. C. viii. p. xl (1899).—Edd.]

XXXII.—*Additions and Corrections to the "Birds of Kohat."*

By Lieut. C. H. T. WHITEHEAD, Indian Army*.

[104.] ARGYA EARLII.

[139.] PYCTORHIS SINENSIS.

These two species were observed only in Bannu (south of our limits), so the notes on them should be in brackets.

[411.] PHYLLOSCOPUS NEGLECTUS. (See 'Ibis,' 1909, p. 124.)

"This specimen is not typical *P. neglectus*. but is larger and darker. It appears to belong to *P. neglectus lorenzi*, but it is difficult to understand how this form can occur at Kohat. Perhaps the distribution of the Caucasian form is much wider than we know at present (Vög. pal. Fauna, i. p. 506). It would be desirable to examine a series and to make sure if it is this form which breeds in Kohat." (*E. Hartert.*)

[624.] *For* SAXICOLA ŒNANTHE *read* SAXICOLA MORIO Hempr. & Ehr.

[666.] MERULA MAXIMA.

In May and June last I found this Blackbird breeding in the juniper-scrub between 10,000 and 12,000 feet. Altogether eight nests were obtained. The nidification is very similar to that of *M. vulgaris*. The nest is usually built in a juniper, but occasionally in the hollow of a cliff. The song seems to lack the quality and variety of that of *M. vulgaris*, but it is not often heard. The ordinary call, and also the alarm-note, is *tchŭt-ŭt-ŭt* rapidly repeated. The rattling alarm so freely used by the common species was only heard when the eggs or young were in danger. The males are very wary, and are seldom seen near the nest, except when the young have to be fed. The majority appear to breed in immature plumage—only two were observed in the glossy black dress with orange bill of the adult. I have sent a nestling and a bird of the year during its first moult to the British Museum.

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* [Lieut. Whitehead sends us the following corrections and additions to his article on the Birds of Kohat and Kurram in Northern India, which appeared in 'The Ibis' for January and April last (above, pp. 90 and 214). Dr. Hartert has kindly examined and determined some of the doubtful specimens. The numbers in brackets are those of the 'Fauna of ritish India.'—EDD.]

[812.] PTYONOPROGNE OBSOLETA.

Common in March in the craggy hills of South Kohat. A few individuals were in pairs, so the bird may possibly breed there.

[838.] MOTACILLA CITREOLOIDES.

I can confirm my note about the nesting of this species in immature plumage. This year I was in its breeding-grounds a month earlier and came across a good many nests. Only about half of those breeding were in full plumage. The remainder were of two forms :—

(1) Grey above, with black feathers here and there; supercilium and under surface yellowish-white.

(2) Dark grey above with some black feathers; head and under surface deep yellow, sullied on the flanks and crown.

I have sent two examples, namely a nesting pair, the male of type (2) and the female of type (1), to the British Museum.

[851.] ANTHUS SPIPOLETTA.

In my list ('Ibis,' 1909, p. 244) under No. [851] appears an enumeration of six specimens under the name *Anthus spipoletta* and of three under *Anthus coutellii*; under the latter name, however, two specimens (Nos. 646 and 647) are mentioned again, though they had appeared already as *Anthus spipoletta*. Dr. Hartert has kindly examined these Pipits for me, and he informs me that, in his opinion, they belong neither to typical *A. spipoletta* nor to *A. coutellii*, but to the Central Asiatic form which he calls *Anthus spinoletta blakistoni* (*cf.* Hartert, Vög. pal. Fauna, i. p. 282). As to numbers 622, 632, and 636, he is quite sure that they are typical *A. blakistoni*, while Nos. 387 and 568 are too much worn and too dirty to be named with certainty, but there is no reason whatever to doubt their belonging to *A. blakistoni* as well. Dr. Hartert has also re-examined the four specimens [852] which I identified as *A. japonicus*, and he agrees with this determination. He points out further that the proper specific name of the Water-Pipit is *spinoletta* and not *spipoletta*, according to the original spelling.

[862.] CALANDRELLA BRACHYDACTYLA.

Nos. 613, 621, 730, 731 are examples of [864] *C. tibetana* and not of *C. brachydactyla*.

[1200.] AQUILA CHRYSAËTUS.

I have now seen the Golden Eagle in its summer-quarters in the Kaghan Valley, and feel fairly certain that the Eagle with the rufous-buff nape, which frequents the low rocky hills in Kohat in winter, is of this species. It is a regular visitor, but not common, and is not seen on the grass farms—the rendezvous of *AA. heliaca, bifasciata, vindhiana*, and *maculata*—nor fighting over carrion, monitor lizards, &c., as these other species do, but is usually found singly in desolate country.

[1388.] RALLUS AQUATICUS.

Another example of this species was shot on the 8th of March.

[1437.] CHETTUSIA GREGARIA.

The note on this species (*suprà*, p. 273) was somewhat misleading. I have re-written it as follows :—

Small flocks pass through from the last week in February till the end of March : many are then in full plumage, *i. e.* are black and chestnut on the abdomen (see Blanford, Fauna of B. I. vol. iv. p. 232). A solitary example was shot on the parade-ground at Fort Lockhart (6500 feet), where it had alighted during parade.

[1447.] ÆGIALITIS DUBIA.

The comma which has been inserted in the 7th line after "Dandar" entirely alters the sense: the comma should follow "at least."

The following species *not* in the Kohat list were noted by me last March on the River Indus near Kalabagh *(a few* *miles south of our limits*), and are of interest as they probably also occur in Kohat:—

[867.] Alaudula adamsi. The Indus Sand-Lark was common along the sandy shore wherever there were patches of vegetation; it had then paired, and one pair allowed me to watch them building their nest under the lee of some tamarisk shoots.

[1189.] Pandion haliaëtus. I saw one Osprey fishing.

[1419.] Esacus recurvirostris. I put up four Great Stone-Plovers off a stony bank.

[1503.] Sterna seena. The Indian River-Tern, the Black-bellied, and the Caspian were all common, especially the first two.

[1517.] Rhynchops albicollis. A flock of about thirty Scissorbills was seen flying up and down the river, occasionally resting on a sand-bank. Cry, a nasal *kap, kap*.

[1583.] Anser indicus. I saw a flock of Bar-headed Geese cropping young beans.

XXXIII.—*Contributions to the Ornithology of Egypt.*—No. II. *Birds of the Province of Giza.*—Part 3*. By Michael J. Nicoll, F.Z.S., M.B.O.U.

125. Cuculus canorus.

Cuculus canorus Shelley, p. 162.

The Cuckoo is a regular visitor during both migrations. The earliest to arrive in autumn are invariably adult birds.

I have never heard the "song" of the Cuckoo in Egypt.

126. Coccystes glandarius.

Coccystes glandarius Shelley, p. 162.

I have not personally met with the Great Spotted Cuckoo in the Province, but Dr. Walter Innes informs me that it occurs commonly in the "Sont" woods near Mazghouna.

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* Continued from p. 484.

An example was seen in the Zoological Gardens on 1st May, 1905, by Capt. Flower.

127. Aluco flammea kirchhoffi (Brehm).

Strix flammea kirchhoffi Brehm, Hartert, Nov. Zool. vii. p. 533.

The Giza Barn-Owl is darker above and more spotted below than British examples, but it is much paler than the dark European bird.

The Barn-Owl is resident in the Province, and several pairs nest in the Zoological Gardens.

128. Asio otus.

Asio otus Shelley, p. 178.

During the autumn of 1906 I saw an Owl which I believe to have been of this species in the Zoological Gardens.

129. Asio accipitrinus.

Asio accipitrinus Shelley, p. 179.

During the spring migration of 1909 I saw or obtained several examples of the Short-eared Owl in the Giza Province. Two were brought in to me alive by Bedouins, who had caught them locally. On 25th March, 1909, Mr. J. L. Bonhote and I saw three examples amongst the rocks in the desert behind the Citadel at Cairo.

130. Syrnium aluco.

Strix aluco Shelley, p. 176.

I met with the Tawny Owl twice in November 1906 and once on 7th August, 1908. On all three occasions the birds were in the Zoological Gardens.

131. Scops giu.

Scops giu Shelley, p. 178.

I have only one record of the Scops Owl, *i. e.*, of a bird seen by Mr. A. L. Butler outside the main gate of the Zoological Gardens on the 26th of August, 1904.

132. Bubo ascalaphus ascalaphus.

Bubo ascalaphus Shelley, p. 180.

The Egyptian Eagle-Owl is resident in suitable localities in the Province. During my residence here several examples have been brought in alive by Bedouins. During the early spring of 1909 Mr. Bonhote and I saw a pair near Aburoash, and on searching the spot from which they were disturbed found feathers and pellets containing the remains of Nightjars (*Caprimulgus ægyptius*).

133. Bubo ascalaphus desertorum Erlanger.

Bubo ascalaphus desertorum Erlanger, Orn. Monatsb. v. p. 192 (1897).

I have an Eagle-Owl now alive at my house which I purchased during the summer of 1907 from a native, who told me that he caught it at the Giza Pyramids. This bird, which is larger, paler, and less thickly marked with black than typical *B. ascalaphus*, is comparable to a specimen picked up dead by Capt. Flower near the Giza Pyramids and now in the Tring Museum. These two birds answer to the description of *B. a. desertorum*, and for this reason I for the present place them under that name. They are certainly very distinct from typical specimens of *B. a. ascalaphus*.

Bubo a. desertorum is beautifully figured in Whitaker's 'Birds of Tunisia,' vol. ii. p. 80.

134. Athene noctua glaux.

Carine meridionalis Shelley, p. 178.

The southern form of the Little Owl is resident and extremely abundant in the Province. It may frequently be heard and seen during the daytime, but becomes more active and noisy at dusk and dawn.

The usual number of a brood of this species is four. I have frequently seen these Owls catch the lizards (*Agama stellio*) which are extremely abundant in the Zoological Gardens, where they were introduced from Alexandria. A number of passerine birds are killed annually in our aviaries by these Owls, which strike at them through the wire netting.

135. Gyps fulvus.

Gyps fulvus Shelley, p. 210.

A large Vulture which was apparently of this species was seen circling over the Zoological Gardens on the 17th of December, 1904.

One example was purchased alive locally on the 28th of Aug., 1905, and another was caught on the river a few miles south of Giza, Nov. 15th, 1905.

136. VULTUR MONACHUS.

Vultur monachus Shelley, p. 209.

Although we have not yet seen a specimen of this Vulture from the Province, there is little doubt that it does occur here.

137. VULTUR AURICULARIS Daud.

Vultur auricularis Shelley, p. 209.

A specimen of the Sociable Vulture was brought in alive in 1902, having been captured locally, and in 1907 two more living examples caught near Giza were purchased from local Bedouins. It seems possible that Egyptian examples belong to a different race, but up to the present time I have had no opportunity of comparing them with typical specimens.

138. GYPS RUEPPELLI.

On August 29th, 1901, two examples said to have been caught locally were purchased alive from a local Bedouin. These birds are still living in the Giza Zoological Gardens.

139. NEOPHRON PERCNOPTERUS.

Neophron percnopterus Shelley, p. 211.

Although this is the Vulture most frequently seen, it does not appear to be so common as it used to be, according to former writers on Egypt. At the present time only a few pairs seem to nest near Cairo. Occasionally it may be seen flying high over the Zoological Gardens. An example in brown plumage, evidently a bird of the year, was brought to me alive during the summer of 1907. This bird, which (with clipped wing) has the full run of my garden, is now (July 1909) little more than half white. The head and neck appear to be the first parts to change from brown to white.

140. Gypaëtus barbatus.

Dr. A. Leith Adams in his 'Notes of a Naturalist in the Nile Valley and Malta' (1870), p. 20, mentions having seen an individual on Nov. 14th, 1863, on the summit of the Great Pyramid of Giza.

141. Circus æruginosus.

Circus æruginosus Shelley, p. 181.

The Marsh-Harrier is not uncommon in the Province, where I have often met with it hawking over the Birseam fields.

142. Circus cineraceus.

Circus cineraceus Shelley, p. 184.

I do not believe Montagu's Harrier to be uncommon in the Province, but as specimens of all the Harriers are very difficult to obtain and it is not easy to identify them on the wing, at all events in immature plumage : it is, therefore, hard to say whether the present species or the Pallid Harrier is the commoner. On April 18th, 1908, a fine adult Montagu's Harrier was brought in to me alive by a Bedouin who had caught it at Aburoash. As regards the breeding of this species in the Province I can say nothing, as I have no actual records of nests of any of the Harriers being found here.

143. Circus swainsoni.

Circus pallidus Shelley, p. 183.

An adult male Pallid Harrier was presented alive to the Gardens by H.H. Prince Kamal el Din Pacha on Dec. 29th, 1908. I have on one or two occasions during the winter months identified individuals of this handsome Harrier flying over the Birseam fields. On the 6th of September and the 22nd of October, 1908, I saw adult examples of this bird flying over the Zoological Gardens.

144. Buteo vulgaris desertorum.

Buteo desertorum Shelley, p. 201.

This form of the Common Buzzard is resident and not uncommon in the Province, where it breeds. I have not met with typical *B. vulgaris* in Egypt up to the present time.

145. Buteo ferox.

Buteo ferox Shelley, p. 201.

The Long-legged Buzzard is not uncommon during the autumn, winter, and spring. At present I have no records of the nesting of this species in the Province, though it is quite possible that it may do so.

146. Archibuteo lagopus.

The Rough-legged Buzzard is a regular visitor to the Province during the autumn migration. During August and September, 1908, an individual frequented the Zoological Gardens.

This species is not included by Shelley in his 'Birds of Egypt.'

147. Aquila clanga.

?*Aquila nævia* Shelley, p. 206.

This Spotted Eagle is not uncommon. I have seen it in autumn—during the flood—perched on the walls of the native wells (sarkaias). On the 7th of April, 1909, I saw an example in the Wadi Hof near Helwan.

Several examples, caught locally, have been presented alive to the Giza Zoological Gardens by H.H. Prince Kamal el Din Pasha.

148. Aquila imperialis Bechst.

Aquila imperialis Shelley, p. 205.

The Imperial Eagle seems to be the common Eagle of the Province, and I have little doubt that it breeds in suitable localities, though up to the present time I have no positive records of it doing so. The majority of examples that I have met with were immature birds, and this is scarcely surprising, as this Eagle takes several years to assume adult plumage. Individuals presented to the Giza Zoological Gardens in the winter of 1906 are still, though in the best of health, in immature plumage.

149. Circaëtus gallicus.

Circaëtus gallicus Shelley, p. 202.

At present I have but one record of the Short-toed Eagle in the Province, *i. e.*, an example seen by myself not far from the Giza Pyramids during the early winter of 1907.

150. NISAËTUS FASCIATUS.

Aquila bonellii Shelley, p. 206.

Bonelli's Eagle is not uncommon during the time of the flood, *i. e.*, in late autumn. I have frequently met with it amongst the scattered "Sont" trees in the cultivated ground near Giza. I have no records of this species during the spring or summer months.

151. ACCIPITER BREVIPES.

Of the Levant Sparrow-Hawk, which is not mentioned by Shelley, I have but one positive record, *i. e.*, a male obtained by myself in the Zoological Gardens on September the 18th, 1908. This species differs from the Common Sparrow-Hawk in having the markings on the under parts in the shape of "drops" and not bars; a narrow black line extends down the centre of the chin and upper throat. The central pair of rectrices is plain and not barred, while the middle toe is considerably shorter, and not so noticeably longer than the others, as is the case with *Accipiter nisus*. Since I obtained my example I have seen Sparrow-Hawks which I fancy were referable to this species, but as I have procured no further examples I cannot say positively.

152. ACCIPITER NISUS.

Accipiter nisus Shelley, p. 185.

The Sparrow-Hawk is a common bird in the Province during the autumn, winter, and early spring, but I have at present no records of it breeding with us. Numbers haunt the Zoological Gardens, and the frequency with which I come across piles of feathers of small passerine birds testifies to the havoc wrought by this Hawk.

153. MILVUS MIGRANS ÆGYPTIUS.

Milvus ægyptius Shelley, p. 196.

The Egyptian or Yellow-billed Kite is abundant and resident. Great numbers frequent the Zoological Gardens and every suitable tree contains a Kite's nest. This bird is exceedingly bold and mischievous. I have seen it snatch meat from the hands of the keepers walking through the Gardens, and on several occasions have observed it grab a fish from the bill of a Jabiru Stork! On one occasion a Kite took away a puttee from one of our men, and on another occasion the head keeper reported that a Kite had stolen a white skull-cap from the head of the boy who feeds and looks after our three examples of *Balæniceps rex*.

For a short time after leaving the nest the young of this species have black bills, but in healthy birds these soon turn waxy yellow. I have, however, seen examples of "adults" in midsummer with black bills, but feel sure that this is a sign of ill-health, for all these individuals had the plumage much worn, and were, moreover, infested with feather-lice.

154. PERNIS APIVORUS.

Pernis apivorus Shelley, p. 199.

The Honey-Buzzard is an autumn visitor to the Province. I have no records of its occurrence at other times of the year. One individual frequented the Zoological Gardens during August 1906.

155. FALCO PEREGRINUS.

Falco peregrinus Shelley, p. 186.

The Peregrine is possibly resident throughout the year, but personally I have only met with it from autumn to early spring. I have at present no skins of this species from Egypt, and have, to the best of my belief, not met with *F. punicus*, which should occur here.

A magnificent specimen of *F. peregrinus* has been an inmate of one of our cages in the Gardens for the past seven years and is still in the best of health.

During the late autumn and winter of 1908 Dotterel (*Eudromias morinellus*) were very abundant on the edge of the desert near the Giza Pyramids, and possibly it was owing to this fact that Peregrines were also numerous. The ground was littered with tufts of Dotterels' feathers, and I frequently saw Peregrines dash down from the desert and strike

Dotterels from the flocks assembled on the edge of the cultivated lands.

156. FALCO BARBARUS.

Falco barbarus Shelley, p. 187.

On September 27th, 1908, I saw two Barbary Falcons circling over the lake in the Zoological Gardens. This is the only record I have at present of this species occurring in the Province.

157. FALCO FELDEGGI.

Falco lanarius Shelley, p. 188.

The Lanner Falcon appears to be resident in the Province, but is, I believe, far less abundant than the Peregrine. Major Sparrow tells me that he took eggs of this species from the second pyramid about fourteen years ago, and that this year (1909) he saw the adult birds at the same place but was unable to get to the nest.

I have seen Falcons flying over the Zoological Gardens which I believe to be Lanners, but unless I have specimens of these larger Falcons in my hand, I find it almost impossible to say to which species they belong.

158. [FALCO SACER.]

Falco sacer Shelley, p. 190.

I include the Saker Falcon with hesitation, as I have not actually examined specimens from the Province. I have a skin of this Falcon which was said to have come from Beni Suef, immediately south of the Giza Province. Moreover, I have occasionally seen Falcons flying past me near the Zoological Gardens which I have little doubt were referable to this species.

159. FALCO SUBBUTEO.

Falco subbuteo Shelley, p. 192.

The Hobby is of frequent occurrence here during the autumn and winter months.

160. FALCO ÆSALON.

Falco æsalon Shelley, p. 191.

The Merlin is abundant in the Province during the winter months; up to the present time I have no records of it nesting here.

161. FALCO VESPERTINUS.

Falco vespertinus Shelley, p. 193.

I have met with the Red-footed Falcon on one occasion only in the Province, *i. e.*, an adult male on the 2nd of October, 1908, in the Zoological Gardens, though it is probably a regular visitor on migration.

162. TINNUNCULUS ALAUDARIUS.

Falco tinnunculus Shelley, p. 194.

The Kestrel which is abundant and resident in Egypt seems smaller and darker than British examples. I have not yet been able to examine a sufficiently large series of adults from this country to come to any definite conclusion. I have not met with *Falco cenchris* in the Province up to the present time.

163. PANDION HALIAËTUS.

Pandion haliaëtus Shelley, p. 203.

The Osprey is a common visitor to the Province during the autumn and winter months, being especially noticeable during the flood, when several pairs may be met with near the Giza Pyramids.

164. PHALACROCORAX CARBO.

Phalacrocorax carbo Shelley, p. 295.

On the 14th of December, 1907, Col. E. Ludlow, A.S.C., shot an example of this species at Giza, which he kindly presented to me. It was in company with thirteen others. A week or so later I saw a Cormorant sitting on a small tree close to the Kasr el Nil Bridge at Cairo. Finally, on February the 9th, 1909, a flock of ten Cormorants flew low over the Zoological Gardens.

165. PELECANUS ONOCROTALUS.

Pelecanus onocrotalus Shelley, p. 293.

During the inundations in autumn flocks of this Pelican may be met with, and I have sometimes seen hundreds together. Single individuals or small flocks are frequently seen flying over the Zoological Gardens during the spring, autumn, and winter months. In its first plumage this bird is of a dull chocolate-brown, but by the following summer the plumage is white with the exception of the scapulars and wings, which are spangled with dusky brown.

In its adult plumage it has a beautiful roseate tinge, but the colour fades in dried skins.

166. Pelecanus rufescens.

Capt. Flower informs me that this species of Pelican visits the Province, for on the 8th or 9th of August, 1905, he saw an example on the Nile between Beni Suef and Giza.

167. Ardea cinerea.

Ardea cinerea Shelley, p. 266.

The Grey Heron is abundant during the autumn, winter, and spring months. I have little doubt that a pair bred in, or near, the Zoological Gardens this year (1909), for on April the 13th a very young bird appeared in the Gardens—so young that it could only just fly. A pair of adults had been observed in the same place throughout the winter and until the second week in April.

168. Ardea alba.

Herodias alba Shelley, p. 267.

A Great White Heron was seen by Capt. Flower in the Zoological Gardens on the 3rd and 5th of June, 1904.

169. Ardea purpurea.

Ardea purpurea Shelley, p. 266.

The Purple Heron is a spring and autumn visitor to the Province of Giza. During the month of September 1908 four individuals of this species frequented the Zoological Gardens for a few days.

170. Ardea garzetta.

Herodias garzetta Shelley, p. 268.

This Egret has been seen eight times in the Zoological Gardens, where it frequently consorts with the Night-

Herons. In September 1908 I saw a single example near the Giza Pyramids.

171. Ardea bubulcus.

Ardeola russata Shelley, p. 268.

The Buff-backed Heron—the "Sacred Ibis" of tourists, according to their dragomans—is now becoming much less abundant than it formerly was. Owing to the high price paid for its "plumes" and the snowy whiteness of its feathers this bird falls a victim to the multitude of "sportsmen" with which Egypt teems. Every autumn during the flooding of the country by the Nile this bird appears, but in constantly decreasing numbers. There is little doubt that it would, if spared, do an immense amount of good in clearing off the "cotton worm"; but its appearance is at once a signal for its destruction, and this is greatly facilitated by its tame and unsuspicious character, so that it seems likely that in the near future this handsome and useful Heron will become a rare bird in Egypt. Those interested in this subject are referred to an article by Dr. Walter F. Innes Bey which appeared in the 'Egyptian Gazette' for the 5th and 6th of January, 1903.

172. Ardetta minuta.

Botaurus minutus Shelley, p. 271.

Owing to its retiring habits the Little Bittern is not often met with, though it occurs in all suitable localities and breeds in Egypt. I have frequently seen examples offered for sale alive to these Gardens which have been caught locally; but although I have observed many in other parts of Egypt I have only once met with this bird alive in this Province, an adult male having been seen in the Zoological Gardens on April 26th, 1909.

173. Nycticorax griseus.

Nycticorax griseus Shelley, p. 270.

For the occurrence of the Night-Heron in the Giza Province see Special Report, No. 3.—"Wild Birds of the Giza Gardens, 1898–1908," Cairo National Printing Departm., 1908.

I may further state that I have seen Night-Herons in small numbers in the grounds of the Khedivial Sporting Club at Gezireh.

174. BOTAURUS STELLARIS.

Botaurus stellaris Shelley, p. 271.

During the winter of 1906 Mr. G. Paget, of the Coldstream Guards, shot a Bittern near the Giza Pyramids. This specimen he kindly presented to me.

I have never personally met with this species in the Province.

175. CICONIA ALBA.

Ciconia alba Shelley, p. 265.

The White Stork is a regular visitor, during both migrations, to the Giza Province.

176. PLATALEA LEUCORODIA.

Platalea leucorodia Shelley, p. 264.

On the 3rd of September, 1902, a flock of Spoonbills was seen by Captain Flower and Mr. A. L. Butler flying over the Zoological Gardens, and on the 20th of October, 1906, we saw a single example under the same conditions.

177. PLEGADIS FALCINELLUS.

Ibis falcinellus Shelley, p. 262.

During the evening of the 18th of April, 1909, six Glossy Ibises circled round the Zoological Gardens and finally settled in a clump of fir-trees, evidently with the intention of "roosting" there. They were, however, driven away by some Hooded Crows.

178. ANSER ALBIFRONS.

Anser albifrons Shelley, p. 280.

The White-fronted Goose appears to be a regular visitor to the Province.

I have two specimens, an adult male and an immature female, both shot at Ghatta on the 18th of December, 1908, by Major R. Sparrow, who kindly presented them to me.

179. ANSER ERYTHROPUS.

Anser erythropus Gurney, 'Rambles of a Naturalist,' p. 221.

A Lesser White-fronted Goose was presented alive to the Giza Zoological Gardens by H.H. Prince Kamal el Din Pasha, who had secured it near Giza on the 29th or 30th of January, 1907.

Mr. J. H. Gurney was the first to record this Goose as occurring in Egypt. Capt. Shelley did not meet with it.

180. TADORNA CORNUTA.

Tadorna vulpanser Fleming; Shelley, p. 281.

On the 4th of December, 1906, Mr. E. W. Buckley shot a pair of Sheldrakes which he kindly sent to me. These two birds were obtained at Gizr el Ramal in the Giza Province.

181. TADORNA CASARCA.

Tadorna rutila Shelley, p. 282.

The Ruddy Sheldrake is not uncommon during the winter months.

On the 25th of November, 1906, I saw nine of these birds feeding in some short grass near the edge of the desert between the Pyramids of Giza and Sakkara.

182. ANAS BOSCAS.

Anas boschas Shelley, p. 283.

The Mallard is by no means abundant in the Province. I have occasionally seen one or two examples in the Zoological Gardens Lake and have sometimes met with it on the flood, but it is never nearly so abundant as the Shoveller or Pintail. On one occasion, however, Capt. Flower counted ten on the Lake.

183. ANAS STREPERA.

Anas strepera Shelley, p. 283.

The only record I have of the Gadwall in the Province is of a male seen by myself on the 10th of December, 1906, on the Zoological Gardens Lake. It probably occurs on the flood, however, for it is not an uncommon bird in the Delta during the winter.

184. Spatula clypeata.

Rhynchaspis clypeata Shelley, p. 285.

Next to the Teal the Shoveller is the commonest Duck in the Province. At least five hundred spend the day on the Lake in the Zoological Gardens during the winter months.

185. Querquedula crecca.

Querquedula crecca Shelley, p. 286.

The Teal is the commonest Duck in the Province. Several hundred spend the day on the Zoological Gardens Lake during the winter months. In certain years a few arrive late in August and some remain till the first or even the beginning of the second week in May.

On their arrival nearly all the adult males are in full eclipse plumage and gradually change to their winter dress. The younger males assume their winter garb after their arrival here, and seldom show red on the head—the first part to change—until the adults are in full or nearly full winter plumage.

At dusk all the Ducks leave this lake and return before dawn. During the winter of 1906 a partial albino female Teal was frequently noticed on our lake.

186. Querquedula circia.

Querquedula circia Shelley, p. 287.

The Garganey, although less numerous than the Teal, is not uncommon in the Province. It seems to arrive in September and I believe passes on almost immediately, though I noticed and shot one on the 17th of November, 1908. On the 22nd of September, 1908, I saw several on the flooded ground near the Giza Pyramids.

187. Dafila acuta.

Dafila acuta Shelley, p. 284.

The Pintail is a common winter visitor.

188. Mareca penelope.

Mareca penelope Shelley, p. 288.

The Wigeon is another abundant winter visitor, but not so numerous in the Province, apparently, as it is in the Delta and on Lake Menzaleh.

189. Fuligula ferina.

Fuligula ferina Shelley, p. 287.

The Pochard is abundant in the Province during the inundation.

190. Fuligula rufina.

The Red-crested Pochard, although not met with by Shelley, seems to be not uncommon in Egypt.

I have two records from the Province. On the 9th of September, 1902, two birds were seen by Capt. Flower and Mr. A. L. Butler flying over the Zoological Gardens; and Dr. Walter Innes Bey tells me that during the winter of 1908–9 he observed this species on the Nile near Giza.

191. Fuligula cristata.

Fuligula cristata Shelley, p. 290.

The Tufted Duck is a common winter visitor to the Province.

192. Fuligula nyroca.

Nyroca leucophthalma Shelley, p. 288.

The Ferruginous Duck is another common winter visitor to the district.

193. Mergus merganser.

During the winter of 1907 a Goosander frequented the flooded ground near Giza, and was seen by both Capt. J. W. H. Seppings and myself.

I believe I have once seen a Red-breasted Merganser, *M. serrator*, near Giza, but it was at too great a distance to be positively identified.

194. Mergus albellus.

An adult male was shot at Ghatta on the 9th of January, 1903, by Mr. M. de C. Findley, who kindly presented it to our collection. This appears to be the first record of the Smew from Egypt.

195. COLUMBA LIVIA LIVIA.
COLUMBA LIVIA SCHIMPERI.
Shelley, pp. 211–212.

Both these forms of Rock-Dove occur in the Province, but I cannot believe that any examples I have seen are "pure bred," owing to the enormous numbers of domestic Pigeons which live in a semi-wild state over the whole of Egypt. In isolated places away from human habitations the wild Pigeons may be pure bred, but there is no place that I know of in the Giza Province far enough away from villages for the Pigeons to be isolated.

196. TURTUR COMMUNIS COMMUNIS.
Turtur auritus Shelley, p. 214.

Great numbers of Turtle-Doves pass through the Province during both migrations.

197. TURTUR COMMUNIS ISABELLINUS.
Turtur sharpii Shelley, p. 215.

This subspecies of Turtle-Dove passes through the Province in some numbers slightly later than the common form. It is difficult to distinguish it from *T. c. communis* when seen flying, but I have positively identified numbers in the Zoological Gardens during both migrations.

198. TURTUR SENEGALENSIS ÆGYPTIACUS.
Turtur senegalensis Shelley, p. 217.

This form of the Senegal Dove is very abundant and resident in the Province. It is a tame bird and frequents houses, especially during the nesting-season. The male is easily distinguishable from the female by its richer coloration.

199. CACCABIS CHUKAR (?).

I insert this Red-legged Partridge on the strength of footmarks of a large Partridge found by myself in the Wadi Hof. I have no specimens, but as we have living examples said to have been obtained at El Arish it is quite likely to occur on the deserts of the Province.

200. AMMOPERDIX HEYI HEYI.

Ammoperdix heyi Shelley, p. 222.

This handsome little Rock-Partridge has been met with in the Wadi Hof near Helwan, which is the only locality I at present know of in the Province for the bird. I have an adult male which I shot there on the 31st of December, 1908. This example lacks the white forehead and lores which are present in most adult male specimens of *A. heyi* that I have examined, but in this respect it agrees with a specimen from Palestine in the Tring Museum.

Ammoperdix cholmleyi was described by Mr. Ogilvie-Grant as distinguishable from *A. heyi* by being darker above and having *no white* on the forehead and lores. This is borne out by most specimens; but although I have not yet seen a specimen of *A. cholmleyi* with a white forehead, I have seen several males of *A. heyi*, besides the two previously mentioned, which have no white on the forehead and lores. Thus it seems that *Ammoperdix cholmleyi* is only to be distinguished from *A. heyi* by the darker coloration of the upper parts, and this I find to be the case on examination of the types of *A. cholmleyi*. In the latter, moreover, the rump is more distinctly barred than in *A. heyi*.

In the typical form, *A. heyi*, the upper parts, mantle, wing-coverts, and scapulars are sandy buff with a pinkish tinge. The lores and forehead are *with or without* white. In *A. cholmleyi* the upper parts are *vinaceous* and the lower back, rump, and upper tail-coverts more distinctly barred. The forehead and lores are *not* white. It should be pointed out that specimens of these two forms are by no means plentiful in collections and that their range is by no means clearly worked out. It would seem that both *A. heyi heyi* and *A. h. cholmleyi* occur in Egypt, but "Egypt" is a somewhat elastic term for a locality, and birds labelled "Egypt" are practically useless unless we know the exact range of the species or subspecies in question.

Specimens of Hey's Partridge are very difficult to obtain, as they trust more to their running powers than to flight, and invariably run away up the sides of the valleys, while always keeping just out of gunshot.

The call-note of this Partridge, although soft and sweet, is audible for a considerable distance in the silent desert valleys, and were it not for this the bird might easily be passed over, so well does its colour harmonize with its surroundings. I have so far never seen more than two individuals together, but my experience of this species in a wild state has been limited, though during the past three years I have had no fewer than fifty birds under observation in captivity. There appears to be no seasonable variation in the change of colour in this species. The eggs are similar in colour to those of Buff Orpington Fowls.

201. COTURNIX COMMUNIS.

Coturnix communis Shelley, p. 223.

The Quail is a regular visitor during the spring and autumn migrations, but is far more abundant during the former season. A few pairs breed in the Province.

202. PORZANA MARUETTA.

Porzana maruetta Shelley, p. 274.

The Spotted Crake is a regular visitor during the autumn migration. I have no records of its occurrence here in spring.

203. CREX PRATENSIS.

Ortygometra crex Shelley, p. 274.

I have but one record of the occurrence of the Land-Rail in the Province, though there can be little doubt that it is a regular visitor on migration. On the 29th of September, 1908, one of our keepers allowed a Siskin to escape from its cage. I gave him a butterfly-net and told him to catch it again. Half an hour later he brought me a Land-Rail which he had caught in some long grass in the Gardens.

204. GALLINULA CHLOROPUS.

Gallinula chloropus Shelley, p. 275.

A few Moorhens arrive in the Zoological Gardens in the autumn, sometimes as early as September, and some remain till the end of April or beginning of May. In April 1905 a pair bred on one of our lakes. This is the only record I have of this species nesting in the province, but it breeds abundantly in the Delta.

205. FULICA ATRA.

Fulica atra Shelley, p. 278.

The Common Coot is very abundant in the Province during the inundation of the Nile. It occasionally occurs in the Zoological Gardens during the winter.

We have never met with *Fulica cristata*.

206. GRUS COMMUNIS.

Grus cinerea Shelley, p. 263.

Common during migration.

207. GRUS VIRGO.

Grus virgo Shelley, p. 264.

Although I have never seen the Demoiselle Crane in Egypt there is no doubt that it passes through the Province during its migrations.

208. ŒDICNEMUS CREPITANS.

Œdicnemus crepitans Shelley, p. 230.

The Stone-Curlew is undoubtedly a breeding species, as we have several living in the aviaries of the Zoological Gardens which were brought in by Bedouins when quite young. I fancy, however, that *Œ. senegalensis* is the commoner species.

209. ŒDICNEMUS SENEGALENSIS.

Œdicnemus scolopax Flower & Nicoll, Special Report No. 3, Zoological Gardens, Giza (1908), p. 25.

This species appears to be a common resident in the Province, and I have every reason to believe that the majority, if not all, of those which frequent the Zoological Gardens belong to this form. Certainly the pair mentioned in our Report of the Wild Birds of the Giza Gardens (p. 25) belong to it, and so do all others which I have seen here since at close enough quarters to identify them with certainty. So far as I can ascertain, this species has not before been recorded in Egypt north of Aswan.

A pair which live wild in the Giza Zoological Gardens frequent a large Ostrich enclosure, where throughout the day they may always be seen sitting under a large straggling pepper-tree. During the summer of 1907 this pair reared a brood of *three* young, all of which I saw when they were a few days old, in company with their parents. They again bred in 1908, and I caught a full-grown youngster by chasing it at night with a lantern. It became confused by the rays of the light, and allowed itself to be picked up. This example is still living in our aviaries.

The down-plumage of *Œ. senegalensis* appears to be much more sandy than that of *Œ. crepitans.*

210. Glareola pratincola.

Glareola pratincola Shelley, p. 227.

As soon as the country near Giza becomes inundated by the Nile in the autumn Pratincoles appear in great numbers. I have seen large flocks near the Pyramids of Giza. A few reappear during the spring migration.

211. Glareola pratincola melanoptera.

Glareola nordmanni Fischer; Shelley, p. 229.

At present I consider it advisable to separate the Black-winged Pratincole as a subspecies, though it seems possible that it is only a variety of the common form. Specimens having the axillaries and under wing-coverts black occur in the Province in the percentage of about one to ten of the common form.

In the black-winged form the secondaries are not tipped with white as they are in *G. p. pratincola,* but in the latter these white tips are very narrow indeed.

212. Cursorius gallicus.

Cursorius gallicus Shelley, p. 229.

The Cream-coloured Courser may be frequently met with on the edge of the desert near the Pyramids of Giza during the winter and early spring.

In a fresh state the legs of this bird are like those of *Alæmon alaudipes*—china-white with an enamelled appearance. This peculiarity, however, is not noticeable in dried skins.

213. CHARADRIUS PLUVIALIS.

Charadrius pluvialis Shelley, p. 235.

The Golden Plover is an uncommon visitor during the winter months.

214. ÆGIALITIS PECUARIA.

Ægialitis pecuarius Shelley, p. 239.

This handsome little Plover is abundant during the autumn, winter, and spring. At present I have had no opportunities for observing it during the summer, but it seems probable that it nests in the Province, for it undoubtedly does so in the Fayoum, and it seems most unlikely that it would, *after* breeding, migrate *northwards*.

215. ÆGIALITIS CANTIANA.

Ægialitis cantianus Shelley, p. 240.

The Kentish Plover is a most abundant bird in the Province during autumn, winter, and spring, and doubtless nests in suitable localities. On Lake Menzaleh, near Damietta, great numbers breed.

216. ÆGIALITIS CURONICA.

Ægialitis minor Shelley, p. 242.

Up to the present time I have only met with the Little Ringed Plover in the Province during the autumn and winter. It seems more partial to damp cultivated ground than to the pools left on the desert-edge, which are always frequented by the Kentish Plover.

217. ÆGIALITIS HIATICOLA INTERMEDIA.

Ægialitis intermedius (Ménétr.); Shelley, p. 242.

For the present I include all the Ringed Plovers which I have obtained here under the above-mentioned name. They are smaller than typical *Æ. hiaticola*, especially as regards the bill.

This Plover is common during the autumn, winter, and spring, but we have no record of its nesting.

218. EUDROMIAS MORINELLUS.

Eudromias morinellus (Linn.); Shelley, p. 236.

During the winter of 1908–9 large flocks of Dotterels, both adult and immature, frequented the desert-edge between the Pyramids of Giza and Sakkara. Many were killed by the Falcons, which seemed to be in unusual numbers, and it is probable that many more fell victims to "sportsmen."

219. HOPLOPTERUS SPINOSUS.

Hoplopterus spinosus Shelley, p. 232.

The Spur-winged Plover is abundant in suitable localities throughout the Province, where it nests. Two young birds were brought in alive on July the 19th, 1909, by Capt. E. S. Jackson, who had caught them at Ayat.

220. VANELLUS VULGARIS.

Vanellus cristatus Shelley, p. 231.

The Lapwing is a common winter visitor, departing in spring.

221. CHETTUSIA LEUCURA.

Chettusia villotæi Shelley, p. 233.

I have only once met with this graceful "Lapwing" in the Province, *i. e.* on the 17th of November, 1908, when I saw a pair of immature birds and obtained one of them.

222. HIMANTOPUS CANDIDUS.

Himantopus candidus Shelley, p. 260.

The Black-winged Stilt is a visitor on migration in small numbers.

223. SCOLOPAX RUSTICULA.

Scolopax rusticola Shelley, p. 247.

The Woodcock is a visitor in small numbers during the winter. One at least frequents the Zoological Gardens every winter.

224. GALLINAGO CŒLESTIS.

Gallinago media Leach; Shelley, p. 249.

The Snipe is abundant in the Province from September to March.

On September 14th, 1908, I shot two Snipes from a flock of at least thirty individuals, which were circling over some inundated land near Giza.

225. GALLINAGO GALLINULA.

Gallinago gallinula Shelley, p. 249.

The Jack Snipe winters in the Province, but is less abundant than the "full" Snipe.

226. RHYNCHÆA CAPENSIS.

Rhynchæa capensis Shelley, p. 250.

The Painted Snipe is of regular occurrence during the winter months, but is not very abundant.

227. TRINGA ALPINA.

Tringa cinclus Linn.; Shelley, p. 253.

The Dunlin appears in small numbers during the inundation, which coincides with the autumn migration.

I have not met with this species in spring in the Province.

228. TRINGA MINUTA.

Tringa minuta Shelley, p. 251.

The Little Stint is, with, perhaps, the exception of the Kentish Plover, the most abundant Wader during the winter months. It arrives in flocks in the autumn, and from that time onward may be met with in quantities in suitable places. I have often seen it round the village ponds, where it consorts with *Ægialitis pecuaria*.

229. TRINGA TEMMINCKI.

Tringa temminckii Shelley, p. 252.

Temminck's Stint is far less abundant than the former species, and, like it, is a winter visitor.

230. TRINGA SUBARQUATA.

Tringa subarquata Shelley, p. 254.

Once or twice during the autumn of 1907 I met with the Curlew-Sandpiper on some flooded ground near the Giza Pyramids.

231. TRINGA CANUTUS.

I saw small flocks of Knots near Giza during the autumn of 1907.

This bird has not previously been recorded from Egypt. The first example obtained in the country seems to be one shot from a small flock near Suez on the 5th of March, 1903, by Capt. Flower.

In March 1909 Mr. J. L. Bonhote and I saw several flocks of this species in the Fayoum on the shores of Lake Birket el Karun.

232. MACHETES PUGNAX.

Machetes pugnax Shelley, p. 246.

Ruffs and Reeves are abundant during the inundation in September, October, and November.

I have never seen a male in full plumage here, but have the skin of an adult Reeve, in worn summer plumage, shot by Capt. J. W. H. Seppings in September 1906.

233. TOTANUS HYPOLEUCUS.

Actitis hypoleucos Shelley, p. 259.

This Sandpiper is of common occurrence during the spring and autumn migrations, and may frequently be seen during the winter months.

234. TOTANUS OCHROPUS.

Totanus ochropus Shelley, p. 258.

Not uncommon from autumn to early spring.

235. TOTANUS GLAREOLA.

Totanus glareola Shelley, p. 259.

I have records of this species in the Province in autumn and winter. It occurs in flocks, great numbers being sometimes seen together.

236. TOTANUS STAGNATILIS.

Totanus stagnatilis Shelley, p. 257.

The Marsh-Sandpiper is not uncommon during the late autumn and winter, but is usually met with singly or in pairs.

237. TOTANUS CALIDRIS.

Totanus calidris Shelley, p. 255.

Fairly common throughout the winter months.

238. TOTANUS FUSCUS.

Totanus fuscus Shelley, p. 255.

Occasionally seen during the winter.

239. Totanus canescens.

Totanus canescens Shelley, p. 256.

A few Greenshanks may be met with throughout the winter and spring.

240. Limosa belgica.

Limosa ægocephala Shelley, p. 245.

Black-tailed Godwits are most abundant in the autumn, during the flooding of the country round about Giza.

241. Numenius arquata.

Numenius arquata Shelley, p. 243.

I have seen Curlews on many occasions from September to May.

242. Sterna fluviatilis vel macrura.

Sterna fluviatilis }
Sterna hirundo } Shelley, p. 299.

I have seen either Common or Arctic Terns on the flooded country, but have no specimens of them.

243. Sterna anglica.

Sterna anglica Shelley, p. 297.

A few Gull-billed Terns frequent the country near Giza during the inundations.

I have an example obtained on the 28th of November, 1907.

244. Sterna cantiaca.

Sterna cantiaca Shelley, p. 297.

A few frequent the flooded country near Giza during the autumn.

245. Hydrochelidon hybrida.

Hydrochelidon nigra (Linn.); Shelley, p. 301.

A few were seen during September 1908, near Giza.

246. Larus ridibundus.

Larus ridibundus Shelley, p. 309.

Black-headed Gulls are frequently seen, sometimes in flocks, flying up the river outside the Zoological Gardens, in winter and early spring.

247. Larus argentatus.

Larus argentatus Shelley, p. 305.

248. Larus cachinnans.

Larus cachinnans Shelley, p. 306.

Both species of Herring-Gulls are occasionally seen on the river at Giza, as well as on the flooded country. At a distance it is not always possible to distinguish them, especially as *L. cachinnans* is often as light on the mantle as *L. argentatus*, but I have at times positively identified both forms.

249. Larus fuscus.

Larus fuscus Shelley, p. 304.

The Lesser Black-backed Gull is frequently met with from autumn to late spring.

250. Podicipes fluviatilis.

Podiceps minor Shelley, p. 314.

On February 14th, 1908, I saw a Grebe, which I believe to have been of this species, on a pool close to the railway between Cairo and Helwan.

Since the publication of the first part of this paper a certain amount of additional information has come to hand, and examples of several species not included in it have been obtained by myself or my friends in the Province of Giza. A few corrections in nomenclature are also advisable. During June last I was enabled, by the kind permission of the Hon. W. Rothschild and Dr. E. Hartert, to compare the majority of my birds with the fine and well-cared-for collection in the Tring Museum, and thus had the opportunity of comparing several of my skins with the types in the Brehm collection. For this privilege, and also for their kind help in identifying many birds which I have been unable to examine personally, I wish to record my best thanks to Mr. Rothschild and Dr. Hartert. My best thanks are also due to Dr. Sharpe and Mr. Ogilvie-Grant, who have given me much help while working at my collections in the British Museum.

With the Editors' permission, I hope, at some future time, to write an Appendix to the Birds of Giza, and thus bring the list "up to date" as far as possible.

XXXIV.—*On a Collection of Birds from Western Australia.* By W. R. Ogilvie-Grant. *With Field-notes by* Mr. G. C. Shortridge.

(Plate IX.)

The following paper is based on a fine collection of West Australian birds presented by Mr. W. E. Balston to the British Museum (Natural History). The specimens were collected by Mr. G. C. Shortridge in the South-western, Central, and Western Divisions of Western Australia, and form a particularly valuable addition to the National Collection, all being carefully labelled and bearing full particulars. In addition to the measurements taken in the flesh and the notes on the colours of the soft parts to be found on the labels, Mr. Shortridge has supplied a number of field-notes. The collection of Australian birds in the British Museum is, according to our modern ideas, of little use for scientific purposes; for, almost without exception, the skins are badly prepared and in hardly any instance do the labels bear any information except some vague locality, such as "South Australia," while the sex and date of capture are almost invariably wanting.

The importance of the "Balston Collection" cannot therefore be over-estimated, as, for the first time, it enables us to examine series of specimens with full data. As was to be expected, several of the forms procured by Mr. Shortridge prove to be new, and most of these will be found among the Passeres which are described in the following pages. The novelties include *Certhionyx occidentalis, Zosterops shortridgei, Z. balstoni, Climacteris wellsi, Malurus bernieri,* and *Sericornis balstoni.*

The following is a list of the localities visited and collected in by Mr. Shortridge:—

Rabbit Island, King George's Sound, South-Western Division, West Australia.
Big Grove, King George's Sound.
Woyaline, King George's Sound.
Oyster Harbour, King George's Sound.
Pelican Point, King George's Sound.

King River, South-Western Division.
Albany, South-Western Division.
Little Grove, Albany Harbour.
Emu Point, Albany.
Chockerup, Albany.
Margaret River, South-Western Division.
Busselton, South-Western Division.
Beechland, Busselton.
Arthur River, Wagin, South-Western Division.
Dwaladine, Brookton, South-Western Division.
Pingelly, Brookton.
Beverley, South-Western Division.
Stockpool, East Beverley.
Dale River, Beverley.
Avon River, Beverley.
York, South-Western Division.
Crookerdine Lake, Southern Cross, Central Division.
Parker's Range, Southern Cross.
Kurrawang, Kalgoorlie, Coolgardie, Central Division.
Laverton, Mt. Margaret, Central Division.
Hawksnest, Laverton.
Carnarvon, Gascoyne River, Western Division.
Clifton Downs, Gascoyne River.
Waggon Hill, Upper Gascoyne River.
Bernier Island, off the mouth of the Gascoyne River.

Mr. Mathews's 'Handlist of the Birds of Australasia,' published as a Supplement to 'The Emu,' vol. vii. 1908, is quoted as "Math." throughout.

STREPERA PLUMBEA Gould.
Strepera plumbea Math. p. 108.
a, b. ♂ et ♂ imm. King River, 6th Jan.–14th Feb.
c. ♀ imm. Chockerup, 24th Jan.
d, e. ♂ ♀. Big Grove, 28th March & 17th April.
f. Ad. Parker's Range, 8th Aug.
g, h. ♂. Kurrawang, 25th Sept. & 4th Oct.

Iris yellow in the adult, yellowish-grey in the immature; bill black, gape and inside of mouth yellow; legs black.

Total length, measured in the flesh, 19·5–21·75 inches.

[The Leaden Crow-Shrike was very plentiful in the southwest, and extended as far inland as Laverton. It is known by the names of "Squeaker" or "Jay" to the Colonists.—*G. C. S.*]

Corvus australis Gmel.

Corone australis Math. p. 107.

a. Imm. Albany, 27th Jan.

Iris dull brown; bill and legs black.

The total length, measured in the flesh, was 19·5 inches.

Corvus coronoides Vig. & Horsf.

Corvus coronoides Math. p. 107.

a, b. ♀. Crookerdine Lake, 19th–21st July.

c. ♂. Kurrawang, 11th Sept.

d. ♀. Clifton Downs, 5th Oct.

Iris dark brown (in immature); bill and legs black.

The above-mentioned specimens appear to belong to *C. coronoides*, having the basal part of the feathers of the upper mantle pure white instead of ashy grey.

[The White-eyed Crow was very numerous, especially in the central and north-western districts. I do not think that the white iris is assumed until at least the second year.—*G. C. S.*]

Corvus bennetti North.

Corvus bennetti Math. p. 107.

a. ♀. Carnarvon, 23rd Aug.

Iris mottled brown (turning white).

Total length, measured in the flesh, 18 inches.

This specimen, which is no doubt referable to *C. bennetti*, is easily distinguished from the above-mentioned species of *Corvus* by its comparatively small bill, which measures as follows:—Length 1·95 inches; height at nostril 0·6: width at nostril 0·6.

Tæniopygia castanotis Gould.

Tæniopygia castanotis Math. p. 101.

a–d. ♂ ♀ et ♂ imm. Crookerdine Lake, 30th July.

e–h. ♂ ♀. Laverton, 18th–28th Oct.

i. ♂. Clifton Downs, 6th Oct.

Iris bright reddish-crimson; bill bright orange-red; feet coral-pink, tinged with orange.

Total length, measured in the flesh, 4·25–4·5 inches.

[The Chestnut-eared Finch was plentiful in the central and western districts and extends as far south as Beverley.—*G. C. S.*]

Zonæginthus oculatus Quoy & Gaim.

Zonæginthus oculatus Math. p. 101.

a. ♂. King River, 1st Dec.

b. Ad. Chockerup, 28th Jan.

c, d. ♀ et imm. Oyster Harbour, 2nd March.

e, f. ♂ ♀. Margaret River, 18th Feb.

Iris dark brown; eyelid lilac; bill reddish-crimson, with a narrow line of lilac at the base of the upper mandible; legs of a light brownish-slate-colour.

Total length, measured in the flesh, 4·75–5·0 inches.

[The Red-eared Finch was gregarious and fairly plentiful in the extreme south-west, but it did not extend inland.—*G. C. S.*]

Anthus australis (Vig. & Horsf.).

Anthus australis Math. p. 100.

a–d. ♂ ♀. King River, 8th–23rd Dec.

e. Ad. Pelican Point, 11th April.

f. ♂. Crookerdine Lake, 24th July.

g. ♂. Kurrawang, 2nd–19th Sept.

h. ♂. Dale River, 16th Dec.

i, k. ♂ ♀. Bernier Island, 23rd June–3rd July.

l. ♂ imm. Clifton Downs, 9th Oct.

Iris hazel; upper mandible dark brown, lower mandible of a flesh-colour, brown at the tip; legs of a brownish flesh-colour.

[The Australian Pipit was very plentiful and widely distributed.—*G. C. S.*]

Acanthogenys rufigularis (Gould).

Acanthogenys rufigularis Math. p. 99.

a–h. ♂ ♀. Crookerdine Lake, 17th–26th July.

i. ♂. Parker's Range, 14th Aug.

k. ♀. Kurrawang, 9th Sept.

l. ♂ imm. Laverton, 16th Oct.

Iris pale blue, naked skin on the face and basal half of the bill pale pink.

The specimen from Laverton, which appears to be immature, has the spiny feathers below the ear short, provided with yellow vanes, forming a yellow patch.

[The Spiny-cheeked Honey-eater was plentiful in the central districts. This is the "Water-bird" of the Colonists, and is said to be seldom found far from a water-hole. It is gregarious in its habits.—*G. C. S.*]

ANELLOBIA LUNULATA (Gould).

Anellobia lunulata Math. p. 99.

a–c. ♂ ♀ et juv. King River, 9th–23rd Dec.

d, e. ♀ et juv. Near Albany, 23rd & 24th March.

f. ♀ imm. Big Grove, 1st May.

Iris crimson; bill black: legs of a pinkish-slate-colour.

Total length, measured in the flesh, 11·25–13·0 inches.

[The Lunulated Wattle-bird is often gregarious, and was plentiful in the coastal districts of the south-west. It often frequented *Banksia* thickets.—*G. C. S.*]

ACANTHOCHÆRA CARUNCULATA (Lath.).

Acanthochæra caruncculata Math. p. 98.

a–d. ♂. Arthur River, 17th June–1st July.

e, f. ♂ ♀. Parker's Range, 9th–11th Aug.

g. ♀. Kurrawang, 5th Sept.

Iris varying from reddish-brown to dull crimson; wattles deep pink; bill black; legs brownish-pink.

Total length, measured in the flesh, 13–15 inches.

[The Wattled Honey-eater was fairly plentiful and is more or less gregarious in its habits. It is rare in the coastal district of the extreme south-west, where its place is taken by *Anellobia lunulata.*—*G. C. S.*]

MYZANTHA FLAVIGULA Gould.

Myzantha flavigula Math. p. 98.

a–i. ♂ ♀. Kurrawang, 3rd Sept.–3rd Oct.

k. ♂. Laverton, 26th Oct.

l. ♂. Carnarvon, 25th Aug.

m. ♀. Clifton Downs, 13th Oct.

Iris dark brown; naked skin round the orbit and on the throat canary-yellow; bill dark ochre-yellow; legs brownish-yellow.

Total length, measured in the flesh, 9·5–10·5 inches.

[The Yellow-throated Miner takes the place of *M. obscura* in the central and western divisions. It was very abundant on the Gascoyne River.—*G. C. S.*]

The above-mentioned series clearly belongs to the smaller *M. flavigula* and not to *M. lutea*; the wing in the male measures 4·8–5 inches, and in the female from 4·65–4·7.

MYZANTHA OBSCURA Gould.

Myzantha obscura Math. p. 98.

a–d. ♂ ♀. Arthur River, 21st–30th June.

Iris dark brown; naked skin round the eye bright canary-yellow; bill yellow; legs dull yellow, brownish above.

Total length, measured in the flesh:—male, 10·5 inches; female, 9·75–10·0 inches.

[The Sombre Miner is gregarious in its habits and frequents the forest-districts of the south-west. It was not observed so far south as Albany.—*G. C. S.*]

MELIORNIS LONGIROSTRIS (Gould).

Meliornis longirostris Math. p. 98.

a–c. ♂. King River, 7th–17th Dec.

d. Ad. Lower King River, 5th March.

e–i. ♂ et juv. Big Grove, 22nd March–30th April.

Iris white; bill black; legs blackish-brown.

Total length, measured in the flesh, 7·0–7·5 inches.

[The Long-billed Honey-eater was very abundant in the coastal districts of the south-west. It was observed as far inland as Beverley, but was not common there.—*G. C. S.*]

PTILOTIS CARTERI Campbell.

Ptilotis carteri Milligan, Emu, iii. p. 248, pl. xvi. fig. 1 (1904); Math. p. 97.

a–e. ♂ ♀. Carnarvon, 2nd–25th Aug.

f–h. ♂ ♀. Clifton Downs, 4th–11th Oct.

Iris dark brown; bill black, gape and nostrils occasionally yellowish; legs of a flesh-colour.

Total length, measured in the flesh:—male, 6·5–7·0 inches; female, 6·25–6·5 inches.

I am inclined to agree with Mr. Campbell [*cf.* Nests & Eggs Austr. B. p. 405 (1901)] and to think that *P. leilavalensis* North should probably be regarded as synonymous with the present species, but there are no Queensland specimens available for comparison with the West Australian series. Mr. Mathews keeps them distinct. The figure of *P. carteri* given in the 'Emu,' and referred to above, represents the bird as having the breast bright yellow like the sides of the head and throat, but this is not really the case; the chest is greyish-buff streaked with pale yellow, and the rest of the under parts are of a bright cream-colour. The back, too, should be browner, the rump much less bright, and the tail-feathers olive, merely margined on the outer web with bright olive-yellow.

[Carter's Honey-eater was plentiful on the Gascoyne River.—*G. C. S.*]

PTILOTIS PLUMULA Gould.

Ptilotis plumula Math. p. 97.

a–f. ♂ ♀. Laverton, 16th–26th Oct.

Iris dark brown; bill black, base of the lower mandible sometimes dark yellow; legs of a light slate-colour.

The only example of the *Ptilotis keartlandi* of North in the British Museum is a female from North-west Cape, West Australia, procured by Mr. T. Carter. This species may be at once distinguished from the nearly allied *P. plumula* by the grey crown and ear-coverts. Other examples in the British Museum from Derby, N.W. Australia, collected by Mr. R. Hall, have been wrongly referred by Dr. Sclater to *P. keartlandi* [*cf.* Bull. B. O. C. xii. p. 50 (1902)], and are really referable to *P. plumula*.

[The Plumed Honey-eater was plentiful around Laverton. As in all the species of this genus, the males are noticeably larger than the females.—*G. C. S.*]

PTILOTIS ORNATA Gould.

Ptilotis ornata Math. p. 96.

a–h. ♂ ♀. Crookerdine Lake, 17th–25th July.

i–l. ♂ ♀. Kurrawang, 8th–12th Sept.

Iris dark brown; bill black, gape and nostrils frequently yellow; legs of a pinkish-slate-colour.

Total length, measured in the flesh, 6·0–6·75 inches.

[The Graceful Honey-eater was very plentiful in the south-west, and ranged inland as far as Kalgoorlie. It was not observed in the coastal district to the south of Brookton, nor did it extend to Laverton, where its place is taken by *P. plumula* Gould.—*G. C. S.*]

Ptilotis novæ-norciæ Milligan.

Ptilotis novæ-norciæ Math. p. 96.

a–c. ♂ ♀. Parker's Range, 10th Aug.

d–g. ♂ ♀. Kurrawang, 3rd–15th Sept.

h. ♀. Stockpool, 24th Jan.

i. ♀. Dwaladine, 12th March.

k–m. ♂ ♀. Kurrawang, 15th Sept.

Iris brown; bill black, inside of the mouth bright orange; legs of a dark olivaceous slate-colour.

Total length, measured in the flesh:—male, 7·75–8·0 inches; female, 7·0–7·25 inches.

This series of specimens appears to be referable to the smaller and paler western form of the White-eared Honey-eater described by Mr. Milligan from the Wongan Hills to the north-east of Perth.

[This species is very local and frequents thickets and high undergrowth. It is not uncommon to the north of Kalgoorlie, but was not observed further south nor nearer the coast than East Brookton.—*G. C. S.*]

Ptilotis forresti Ingram.

Ptilotis forresti Ingram, Bull. B. O. C. xvi. p. 116 (1906); Math. p. 95.

a. ♀. Laverton, 13th Oct.

This species is most nearly allied to *P. sonora* Gould, of which it is a paler form. It is distinguished by the light earth-brown colour of the upper parts *including the crown*, and by the paler under parts, which are more faintly streaked.

In the British Museum there are two female examples of this form procured on the Fitzroy River by the late Mr. Bowyer-Bower.

The specimen in the British Museum from Gould's collection, referred to *P. forresti* by Mr. Ingram, differs in having the ear-coverts orange-yellow instead of chrome-yellow, and the outer margins of three of the primary quills in each wing dull orange-yellow instead of olive-yellow.

The label on this specimen gives no indication as to its origin; but in Gould's writing are the words " Appears to be a light variety of *Ptilotis sonora*."

Possibly this bird represents a different form, the colour of the ear-coverts being rather an important character, but with a single example devoid of any exact particulars it is best to await the arrival of additional material.

PTILOTIS SONORA Gould.

Ptilotis sonora Math. p. 95.

a–h. ♂ ♀. Arthur River, 17th–25th June.
i, k. ♂. Crookerdine Lake, 22nd & 28th July.
l. ♂. Dale River, Jan.
m, n. ♂. Bernier Island, 11th & 24th June.

Iris dark brown; bill black; legs of a dark slate-colour.

Total length, measured in the flesh :—male, 8–8·75 inches; female, 7–8 inches.

The birds from Bernier Island are in very worn plumage, and are consequently much paler in general appearance, especially on the upper parts, than the rest of the series.

[The Singing Honey-eater was plentiful throughout the south-west, and extended inland as far as Laverton and north to the Gascoyne River and Bernier Island. It was not observed round Albany.—*G. C. S.*]

CERTHIONYX OCCIDENTALIS, sp. n.

Adult male. Differs from the male of *C. variegatus* Lesson in having the white on the inner secondaries confined to the outer web: in the latter species the white extends over the basal part of the inner web also on two of the secondary feathers. Iris reddish-hazel; bill slate-blue, darker at the tip; gape and wattles below the eye pale blue; legs of a slate-colour. Total length, measured in the flesh, 7 inches, wing 3·4, tail 2·75, tarsus 0·85.

An immature male from North-west Cape (*A. G. Campbell*) resembles the Carnarvon bird as regards the markings of the secondary quills.

a. ♂. Carnarvon, 19th Aug. (*Type of the species.*)

[This western form of the Pied Honey-eater was rare round Carnarvon.—*G. C. S.*]

GLYCIPHILA SUBOCULARIS Gould.

Stigmatops ocularis Math. p. 95 [part.].

a–c. ♂ et imm. Emu Point, 19th Jan. & 5th March.
d, *e.* ♂ ♀. Big Grove, 9th March.
f. ♂. Arthur River, 21st June.
g. Ad. Dwaladine, 13th March.

Iris dark greyish-brown; bill black; legs of a slate-colour.

Total length, measured in the flesh, 5·2–5·75 inches.

These specimens from S.W. Australia appear to belong to the smaller form named *G. subocularis* by Gould.

[The Lesser Brown Honey-eater was plentiful in the south-west, but did not extend inland.—*G. C. S.*]

GLYCIPHILA ALBIFRONS Gould.

Glycyphila albifrons Math. p. 94.

a. ♀. Crookerdine Lake, 21st July.
b–d. ♂ ♀. Parker's Range, 13th Aug.
e–k. ♂ ♀. Kurrawang, 5th–15th Sept.
l. ♂ imm. Laverton, 16th Oct.

Iris dark brown or reddish-brown; eyelid dusky in front, blood-red behind; bill black; legs dark brown.

[The White-fronted Honey-eater was a shy bird, but plentiful in the central division, where it generally frequented the open heaths. It was obtained as far west as Beverley and Brookton, where, however, it was much less numerous. —*G. C. S.*]

Glyciphila melanops (Lath.).

Glycyphila melanops Sharpe, Hist. Coll. Brit. Mus. ii. p. 127 (1905) ; Math. p. 94.

a–c. ♂ ♀. King River, 7th–19th Sept.

d–g. ♂ ♀ imm. Big Grove, 23rd March–21st April.

h. ♂. Arthur River, 25th June.

i, k. ♂ ♀. Parker's Range, 13th Aug.

l. ♀. Stockpool, 24th Jan.

Iris dark brown ; bill black ; legs olive-black.

Total length, measured in the flesh, 6·5–7·25 inches.

[The Fulvous-fronted Honey-eater was plentiful in the south-west ; it was observed as far inland as Southern Cross, where, however, it was more or less replaced by *G. albifrons* Gould.—*G. C. S.*]

Acanthorhynchus superciliosus (Gould).

Acanthorhynchus superciliosus Math. p. 93.

a–d. ♀ et ♀ imm. King River, 7th Dec.–4th Jan.

e–g. ♀ et ♀ imm. Big Grove, 26th March–21st April.

Iris crimson in the adult, dark grey in the immature bird ; bill black ; legs dark brown.

[The Western Spine-billed Honey-eater was very abundant around Albany, and was observed as far north as Beverley and Perth, but it did not extend inland.—*G. C. S.*]

Melithreptus leucogenys Milligan.

Melithreptus leucogenys Math. p. 92.

a, b. ♂. Arthur River, 18th & 22nd June.

c, d. ♂ ♀. Crookerdine Lake, 17th July.

e, f. ♂. Dale River, 15th & 16th Dec.

Iris hazel ; bare skin round eye dull yellow, occasionally tinged with bluish below ; bill black ; legs of a yellowish-horn-colour.

Total length, measured in the flesh, 5·5 inches.

[The Western Brown-headed Honey-eater is gregarious in its habits and plentiful in many parts of the south-west, except in the extreme coastal districts ; it was observed as far inland as Southern Cross.—*G. C. S.*]

MELITHREPTUS CHLOROPSIS Gould.

Melithreptus chloropsis Math. p. 92.

a–c. ♀ et ♂ imm. King River, 7th Dec.–15th Jan.

d. ♂. Chockerup, 23rd Jan.

e. Ad. Near Albany, 26th March.

f. g. ♂. Big Grove, 1st & 2nd May.

h. ♂ imm. Margaret River, 17th Feb.

Iris reddish-brown; naked skin above the eye *white*, below *pale blue*; bill dark olive-brown, orange at the base and on the inside of the mouth; legs yellowish-brown.

Total length, measured in the flesh, 5·5–6·5 inches.

Gould says that the naked skin above the eye in *M. chloropsis* is greenish-white in some specimens, and pale wine-yellow in others. In *M. lunulatus* (Shaw) the naked skin above the eye is *scarlet*, but in other respects the species is hardly distinguishable from *M. chloropsis*.

[The Western Lunulated Honey-eater is gregarious in its habits and very plentiful among the high Eucalyptus-trees in the coastal districts of the south-west. Further inland it is replaced by *M. leucogenys* Milligan.—*G. C. S.*]

MYZOMELA NIGRA Gould.

Myzomela nigra Math. p. 93.

a–c. ♂. Dwaladine, 24th Feb. & 12th March.

Iris very dark brown; bill and feet black.

Total length, measured in the flesh, 5·0–5·25 inches.

[The Black Honey-eater was not uncommon to the east of Brookton; it frequents the tops of trees.—*G. C. S.*]

PARDALOTUS ORNATUS Temm.

Pardalotus ornatus Math. p. 90.

a. ♂. King River, 5th Jan.

b–d. ♀. Dale River, 20th Dec. to Jan.

e, f. ♂. Crookerdine Lake, 17th & 19th July.

g–k. ♂ ♀. Parker's Range, 8th–13th Aug.

l, m. ♂ ♀. Kurrawang, 9th & 15th Sept.

n. ♀. Clifton Downs, 4th Oct.

Iris olive-brown or greenish-yellow; bill dusky black, of a horn-colour at the gape; legs of a slate-colour.

Total length, measured in the flesh, 4·0–4·5 inches.

[The Striated Diamond-bird was plentiful throughout the central and south-western divisions. It was particularly abundant round Southern Cross, but rare on the Gascoyne River.—*G. C. S.*]

PARDALOTUS PUNCTATUS (Shaw & Nodd.).

Pardalotus punctatus Math. p. 91.

a. ♀. Lower King River, 27th Feb.

b–e. ♂ ♀ et imm. Big Grove, 9th March–2nd May.

Iris yellowish-brown; bill dark slate-brown; legs of a brownish-flesh-colour.

Total length, measured in the flesh, 3·75 inches.

[The Spotted Diamond-bird was very plentiful in the south-west, probably more so than *P. ornatus* in the coastal districts, but it does not seem to extend inland.—*G. C. S.*]

PARDALOTUS RUBRICATUS Gould.

Pardalotus rubricatus Math. p. 91.

a–c. ♂. Clifton Downs, 7th Oct.–5th Dec.

Iris bright greenish-yellow; bill dark cinnamon-brown above, of a light horn-colour below; legs of a light dusky slate-colour.

Total length, measured in the flesh, 4·25–4·5 inches.

Pardalotus pallidus, a species said to be closely allied to *P. rubricatus,* has been described by Mr. A. J. Campbell [*cf.* 'Emu,' viii. p. 142 (1909)]. I have examined a male procured at North-west Cape (which lies about three hundred and fifty miles to the south of the De Grey River, where the type of *P. pallidus* was obtained), and find that it agrees in every respect with typical examples of *P. rubricatus.* *P. pallidus* is said to be "much lighter-coloured than any known species of the genus."

[The Fawn-eyebrowed Diamond-bird was not plentiful.—*G. C. S.*]

DICÆUM HIRUNDINACEUM (Shaw).

Dicæum hirundinaceum Math. p. 90.

a–e. ♂ ♀. Kurrawang, 21st Sept.–3rd Oct.

Iris dark brown, bill black; legs, in the male blackish-brown, in the female slate-black.

Total length, measured in the flesh, 4·0–4·25 inches.

[The Mistletoe-bird is said to be more or less migratory.—*G. C. S.*]

ZOSTEROPS GOULDI (Bonap.).

Zosterops gouldi Math. p. 89.

a, b. ♂. King River, 1st & 9th Dec.
c, d. ♂. Dwaladine, 13th March.
d–f. ♂. Bernier Island, 26th June & 12th July.
g, h. ♂. Carnarvon, 22nd Aug.

Iris of a light horn-colour; bill of a horn-colour, darker on the upper mandible; legs of a flesh-colour tinged with bluish.

Specimens from Carnarvon and Bernier Island appear to have the under parts somewhat paler than birds from the south-west; and the males, if their sex has been correctly determined, seem to lack the cinnamon wash on the sides and flanks. The material at present available for comparison is insufficient to warrant separation.

[The Green-backed Silver-eye is gregarious and was very plentiful in the south-west, but did not occur far inland. It extends as far north as the Gascoyne River and Bernier Island.—*G. C. S.*]

ZOSTEROPS SHORTRIDGII, sp. n.

Adult male. Most nearly allied to the male of *Z. gouldi* Bonap., but differs in having the middle of the breast, as well as the belly, thighs, and under tail-coverts, pale yellow: the sides and flanks greyer and only slightly washed with cinnamon. In *Z. gouldi* the thighs are always white.

Total length, measured in the flesh, 5 inches: wing 2·3; tail 1·9; tarsus 0·7.

a. ♂. Rabbit Island, Albany, 17th April. (*Type of the species.*)

ZOSTEROPS BALSTONI, sp. n.

Adult male and female. Similar to *Z. lutea* Gould, but with the upper parts decidedly more greyish-olive and the under parts, especially the middle of the breast and belly, less brilliant yellow.

Iris bright hazel; bill black, basal half of the lower mandible of a light bluish-slate colour.

Total length, measured in the flesh, 4·25–4·5 inches; wing 2·2: tail 1·6: tarsus 0·7.

a, b. ♂ ♀. Carnarvon, 23rd Aug. (*Types of the species*)

In addition to the type-specimens, I have examined a pair procured at North-west Cape (*A. G. Campbell*), which agree in every respect with the Carnarvon birds.

[Balston's White-eye inhabits the coastal mangrove-swamps around Carnarvon and is gregarious in its habits.—*G. C. S.*]

CLIMACTERIS WELLSI, sp. n.

Adult male. Most nearly allied to the male of *C. melanura* Gould, but at once distinguished by having the general colour of the under parts chestnut instead of brown, and the middle of the breast rufous-buff (not smoky-buff), with white, black-edged, shaft-streaks. The under tail-coverts are black, strongly barred with white, instead of black narrowly tipped with white. In other respects the plumage is very similar to that of *C. melanura.*

Adult female. Differs from the female of *C. melanura* in a similar manner to the male described above.

Iris dark brown; bill and legs blackish-olive.

♂. Total length, in the flesh, 7·0–7·25 inches; wing 3·7–3·85; tail 2·7.

♀. Total length, in the flesh, 6·75–7·0 inches; wing 3·65–3·7; tail 2·55–2·6.

a–g. ♂ ♀. Clifton Downs, 19th Sept.–7th Oct. (Including *types of the species.*)

C. melanura Gould, which appears to be the nearest ally of this fine new species, is said to range throughout North-west Australia, Queensland, and the northern territory of South Australia. *C. wellsi* was only met with on the Upper Gascoyne River, where it was plentiful among the Eucalyptus and other trees which fringe the river-beds and water-courses.

CLIMACTERIS RUFA Gould.

Climacteris rufa Math. p. 88.

a. ♂. King River, 4th Jan.
b, c. [♂] [♀]. Arthur River, 1st July.
d, e. ♂ [♀]. Crookerdine, 17th & 19th July.
f. ♂. Parker's Range, 8th Aug.
g–i. ♂ et ♂ imm. Kurrawang, 2nd Sept.–3rd Oct.
k. ♀ [♂ imm.]. Hawksnest, 10th Nov.
l. [♀.] Dale River, 19th Dec.

There appears to have been a difficulty in ascertaining the sex of some of these birds, two of the females having been marked as males and several males as females.

Iris dark brown or hazel; bill dark brown in the adult, of a slate-colour above, with the sides and base of a flesh-colour, in the immature; legs dark brown in the adult, of a slate-colour in the immature.

Total length, measured in the flesh, 7–8 inches.

[The Rufous Tree-Creeper was plentiful throughout the south-west and central divisions, extending inland as far as Laverton—where, however, it was rare and confined to the isolated strips of Eucalyptus along the water-courses. It is represented by *C. superciliosa* in the Mulga country.—*G. C. S.*]

CLIMACTERIS SUPERCILIOSA North.

Climacteris superciliosa Math. p. 89.

a–f. ♂ ♀. Hawksnest, 2nd–12th Nov.

Iris dark brown; bill black; legs dark slaty.

Total length, measured in the flesh, 6·0 inches.

[The White-eyebrowed Tree-Creeper was fairly plentiful around Laverton; it frequented the Mulga scrub.—*G. C. S.*]

Two pairs of this rare Creeper were procured and are new to the British Museum. It was originally described by Mr. North ('Ibis,' 1895, p. 341) from specimens obtained by the Horn Expedition at Illara Creek, Central Australia, but appears to range over the greater part of Australia. The figure of this species [Horn, Sc. Exp. Centr. Austr. pt. ii.

Zool. pl. vii. (1896)] is somewhat misleading, as the wide pale buff band through the wing is not indicated and the back is represented as being olive instead of greyish-brown.

NEOSITTA PILEATA (Gould).

Neositta pileata Hellmayr, Tierreich, Sittidæ, p. 197 (1903); Math. p. 88.

a–e. ♂ ♀. King River, 12th Dec.–10th Jan.
f. ♀. Big Grove, 29th April.
g. ♂. Crookerdine Lake, 18th July.
h. ♀. Parker's Range, 10th Aug.
i. ♀. Kurrawang, 8th Sept.

Iris reddish-buff; eyelids yellow; bill cinnamon-brown, with the basal half yellow; legs yellow, claws brown.

Total length, measured in the flesh, 4·75–5·0 inches.

[The Black-capped Bark-pecker was plentiful in the south-west and ranged as far inland as Kalgoorlie, and as far north as the Gascoyne River, where, however, it became less plentiful. It differs from *Climacteris* in being gregarious, and resembles a Nuthatch rather than a Woodpecker in its habits.—*G. C. S.*]

NEOSITTA TENUIROSTRIS (Gould).

Neositta tenuirostris Math. p. 88.

a. ♂. Hawksnest, 6th Nov.

Total length, measured in the flesh, 4·4 inches.

The type of this species appears to be quite a young bird with a brownish head. It has a very long and very slender bill with the terminal portion maroon-red. An adult male, procured at Hawksnest, Laverton, appears to belong to this slender-billed form, being very similar to the type, but with the crown black, and a narrow band across the forehead, as well as the sides of the face, white.

SPHENOSTOMA CRISTATUM Gould.

Sphenostoma cristatum Math. p. 87.

a–d. ♂ ♀. Carnarvon, 19th July–25th Aug.
e–h. ♂ ♀ et ♀ imm. Clifton Downs, 9th–16th Oct.

Iris hazel; bill black; legs slaty.

Total length, measured in the flesh, 8·0–8·5 inches.

[The Crested Wedge-bill was plentiful on the Gascoyne River. It closely resembles the Crested Bell-bird (*Oreoica cristata*) in its movements, habits, and general appearance. It is rather a shy bird and generally frequents scrubby thickets. Its notes are very striking and have a peculiarly metallic sound.—*G. C. S.*]

XEROPHILA CASTANEIVENTRIS Milligan.

Xerophila castaneiventris Milligan, Emu, iv. p. 185, pl. xiii. fig. 1 (1905).

Aphelocephala castaneiventris Math. p. 87.

a–e. ♂ ♀. Crookerdine Lake, 17th–25th July.

f–h. ♀ et imm. Kurrawang, 7th & 8th Sept.

i. ♀. Laverton, 15th Oct.

k–n. ♂ ♀. Clifton Downs, 9th–15th Oct.

Iris pale buff, light bluish-grey in the young; bill and feet black.

Total length, in the flesh, 4·5–4·75 inches.

[The Chestnut-bellied Whiteface was plentiful in the central divisions, where it might often be seen going about in small flocks in company with the Chestnut-rumped Thornbill (*Acanthiza uropygialis*) and the Redthroat (*Sericornis brunnea*). It was fairly numerous as far north as the Gascoyne River.—*G. C. S.*]

EOPSALTRIA GULARIS (Quoy & Gaimard).

Eopsaltria gularis Math. p. 86.

a–e. ♂ ♀ et imm. King River, 12th–26th Dec.

f–h. ♂. Parker's Range, 9th–16th Aug.

i–k. ♂. Dale River, 14th–28th Dec.

Iris dark brown; bill and legs black.

Total length, measured in the flesh, 6·0–6·25 inches.

As Mr. A. J. North has already pointed out [Nests & Eggs of B. Austr. i. p. 187 (1903)], a serious error was made by Dr. Gadow in volume viii. of the 'Catalogue of the Birds in the British Museum.' On page 178 *Eopsaltria gularis* is described under the heading *E. georgiana*, and on p. 181 a description of *E. georgiana* is given under the heading *E. gularis*.

Both species were described and figured in Quoy and Gaimard's 'Voyage de l'Astrolabe.'

[The Grey-breasted Robin frequents woods and sheltered localities.—*G. C. S.*]

EOPSALTRIA GEORGIANA (Quoy & Gaimard).

Eopsaltria georgiana Math. p. 86.

a–e. ♀. Big Grove, 8th March–2nd May.

Iris dark-brown; bill and legs black.

Total length, measured in the flesh, 6·25–6·5 inches.

[The White-bellied Robin frequents woods and shady places.—*G. C. S.*]

PACHYCEPHALA OCCIDENTALIS Ramsay.

Pachycephala occidentalis Math. p. 85.

a–e. ♂ et ♂ imm. King River, 18th Dec.–6th Jan.

f–h. ♀ et ♂ imm. Big Grove, 3rd–25th March.

i. ♂ imm. Kurrawang, 7th Sept.

Total length, measured in the flesh, 7·0 inches.

Iris brownish-red or dull crimson; bill black; legs of a dark brownish-slate-colour.

It seems a little doubtful whether the immature male from Kurrawang belongs to the present species: it would be interesting to examine adult specimens from the Coolgardie district.

[The Western Thickhead was very plentiful in the south-west. The males were much more shy than the females.—*G. C. S.*]

PACHYCEPHALA RUFIVENTRIS Lath.

Pachycephala rufiventris Math. p. 85.

a–e. ♂ ♀ et imm. Arthur River, 18th–20th June.

f–h. ♂ ♀. Dale River, 18th & 19th Dec.

Adult. Iris dull crimson; bill and legs black.

Immature. Iris hazel; bill of a pinkish-horn-colour, dull brown above.

Total length, measured in the flesh, 7·0–7·5 inches.

One adult female from the Arthur River has the under parts pale rufous, much as in the adult male; in two other specimens the under parts are paler rufous and similar to the examples already in the British Museum.

[The Rufous-breasted Thickhead was plentiful around Wagin and Beverley.—*G. C. S.*]

Oreoica cristata Lewin.

Oreoica cristata Math. p. 84.

a, b. ♂. Arthur River, 26th June & 5th July.
c–f. ♂ ♀. Crookerdine, 17th–24th July.
g, h. ♂. Parker's Range, 14th Aug.
i. ♂. Kurrawang, 15th Sept.
k. ♂. Laverton, 18th Oct.
l. imm. Clifton Downs, 15th Oct.

Iris deep yellow or orange; bill black; legs of a slate-colour.

Total length, measured in the flesh, 8·5–9·0 inches.

[The Crested Bell-bird is a widely distributed species, but does not occur in the Albany district.—*G. C. S.*]

Cracticus destructor Temm.

Cracticus destructor Math. p. 84.

a. ♂. Arthur River, 26th June.
b, c. ♂ ♀. Crookerdine Lake, 27th July.
d, e. ♂ ♀ imm. Parker's Range, 7th & 9th Aug.
f–h. ♂ et ♂ ♀ imm. Kurrawang, 3rd Sept.–4th Oct.
i–l. ♂ et ♂ imm. Laverton, 19th Oct.

Iris dark brown; base of the bill light slate-blue, black at the end; legs black in the male, of a dark slate-colour in the female.

Total length, measured in the flesh, 11·5–12·5 inches.

[This "Butcher-bird" was plentiful.—*G. C. S.*]

Cracticus nigrigularis Gould.

Cracticus nigrigularis Math. p. 83.

a–i. ♂ ♀ et ♂ ♀ imm. Kurrawang, 18th–30th Sept.
k. Juv. Laverton, 23rd Oct.
l. ♂ imm. Hawksnest, 8th Nov.
m. ♀. Clifton Downs, 20th Sept.

Iris dark brown; basal portion of the bill pale bluish, slate-black at the end; legs dull olive.

Total length, measured in the flesh, 7·5 inches.

[The Black-throated "Butcher-bird" was fairly plentiful in the western and central divisions; it is frequently gregarious and somewhat resembles *Gymnorhina* in certain of its habits.—*G. C. S.*]

GYMNORHINA LONGIROSTRIS Milligan.

Gymnorhina longirostris Math. p. 83.

a–c. ♂ ♀. Clifton Downs, 5th–10th Oct.

Iris bright reddish-hazel; bill bluish-white, of a dark slate-colour at the tip; legs of a dark olivaceous slate-colour.

Total length, measured in the flesh, 15·25–16·0 inches.

[The Long-billed "Magpie" was not uncommon on the Gascoyne River, where it takes the place of *G. dorsalis* Campbell, of the south-western and central divisions.—*G. C. S.*]

This species was first described by Mr. Milligan ['Emu,' iii. p. 96, pl. v. fig. 1 (1903)] from specimens procured on the Ashburton River, N.W. Australia.

Two years later it was again described by Dr. Hartert [Nov. Zool. xii. p. 230 (1905)] from examples obtained at Nullagine, N.W. Australia. Curiously enough he also called it *Gymnorhina tibicen longirostris*.

GYMNORHINA LEUCONOTA Gray.

Gymnorhina leuconota Math. p. 83.

a. ♂. King River, 7th Jan.

b, c. ♂ et ♂ imm. Dale River, 31st Dec.

d. ♀. Arthur River, 18th June.

e–g. ♂ et imm. Kurrawang, 21st–23rd Sept.

h. ♂ imm. Crookerdine Lake, 26th July.

Adult. Iris bright hazel or crimson; bill bluish-white, with the terminal half of a dark slate-colour; legs black.

Total length, measured in the flesh, 16·5 inches.

The immature birds, specimens *c* and *f*, having dark backs fringed with whitish, are probably the young of the present species. An older male (*h*) has the feathers of the back mottled with black and white. An adult female has the feathers of the back black, narrowly fringed with whitish and spotted with white.

[The White-backed Magpie was very plentiful in the south-western and central divisions. It was more or less gregarious except during the nesting season.—*G. C. S.*]

GRALLINA PICATA Lath.

Grallina picata Math. p. 82.

a. Imm. York, 2nd Jan.
b. ♂. Dale River, 8th Jan.
c, d. ♂ imm. Avon River, 16th Jan.
e, f. ♂. Carnarvon, 25th Aug.
g, h. ♂ ♀. Clifton Downs, 20th Sept.

Iris greenish-white or pale yellow in the adult, grey or dull greenish-yellow in the immature; bill whitish-buff, tipped with dark horn-colour; feet black.

Total length, measured in the flesh, 11–12½ inches.

[The "Magpie-Lark" of the Colonists was plentiful in many parts of the south-west, and very abundant in the west in the neighbourhood of the Gascoyne River. It was generally met with close to the water and rather resembles a wading-bird when feeding or running on the ground.—*G. C. S.*]

COLLYRIOCINCLA RUFIVENTRIS Gould.

Collyriocichla rufiventris Math. p. 82.

a–d. ♂. King River, 22nd Dec.–10th Jan.
e, f. Ad. Chockerup, 23rd–25th Jan.
g. ♀. Dale River, 16th Dec.
h. ♀. Parker's Range, 7th Aug.
i, k. ♂ ♀. Crookerdine Lake, 21st & 23rd July.
l. ♂. Kurrawang, 3rd Sept.

Iris reddish-hazel, brown or dark brown; bill black in adult, lower mandible of a horn or pinkish-horn colour in immature; legs slate- or greenish-slate-colour.

In some examples, apparently the most mature, the breast and sides are uniform grey without any trace of dusky shaft-streaks, while the inner webs of the quills are margined with whitish instead of buff. The series procured by Mr. Shortridge seems to prove clearly that, in spite of the above-mentioned differences in plumage, all the specimens belong to one species, *C. rufiventris,* and that the shaft-streaks disappear with age.

The total length measured in the flesh varies from 9·5 to 10·0 inches.

[The Buff-bellied Shrike-Thrush, commonly known to the colonists as the "Thrush," is abundant in the south-west, but less plentiful in the central divisions.—*G. C. S.*]

ARTAMUS LEUCOGASTER (Valenc.).

Artamus leucogaster Math. p. 80.

a, f. ♂ ♀. Carnarvon, 2nd Aug.

Iris dark brown; bill pale blue, indigo-black at the tip; legs of a dark slate-colour, dusky-white between the scutes.

[The White-rumped Wood-Swallow was plentiful and gregarious in its habits. It is a migratory species.—*G. C. S.*]

ARTAMUS PERSONATUS Gould.

Artamus personatus Math. p. 81.

a–l. ♂ ♀. Kurrawang, 16th–18th Sept.

m. [♂]. Laverton, 14th Oct.

n. ♂. Dale River, 16th Dec.

Iris dark brown; bill pale bluish, blackish at the tip; legs dusky black.

Total length, measured in the flesh, 7·5–8·0 inches.

Mr. C. Ingram has described an allied form from Alexandra Station under the name *A. gracilis.* It is said to have the general colour more ashy [*cf.* Bull. B. O. C. xvi. p. 115 (1906)].

[The Masked Wood-Swallow is gregarious and migratory in its habits, often going about in flocks of many thousands in the western and central divisions. In the south-west its occurrence is very uncertain.—*G. C. S.*]

ARTAMUS MELANOPS Gould.

Artamus melanops Math. p. 81.

a–c. ♂ et ♂ ♀ imm. Avon River, 16th Jan.

d–l. ♂ ♀. Laverton, 13th–21st Oct.

m. ♀. Hawksnest, 2nd Nov.

n, o. ♀ et ♂ imm. Clifton Downs, 16th Oct.

Adult. Iris dark brown; bill greyish-blue, blackish at the tip; legs bluish-slate-colour.

Immature. Bill pinkish-olive, tinged on the sides and at the gape with yellow.

Mr. Ingram has described a form from the Alexandra Station which he calls *Artamus florenciæ.* It is said to be paler and more ashy [*cf.* Bull. B. O. C. xvi. p. 115 (1906)].

[The Black-faced Wood-Swallow was plentiful; it is gregarious and migratory in its habits.—*G. C. S.*]

Artamus tenebrosus (Lath.).

Artamus tenebrosus Math. p. 81.

a f. ♂ ♀ et juv. King River, 12th Dec.–10th Jan.

g. ♀ imm. Chockerup, 22nd Jan.

h. ♂. Big Grove, 2nd May.

i, k. ♂. Parker's Range, 7th Aug.

l, m. ♂. Kurrawang, 2nd & 12th Sept.

n. Ad. Avon River, 13th Jan. 06.

Iris dark brown; bill pale blue, indigo-black at the tip; legs slate-blue.

Total length, measured in the flesh, 7–7·5 inches.

[This Wood-Swallow was gregarious, and the most plentiful species in the south-west. It is apparently only partly migratory, and is widely distributed throughout the central divisions.—*G. C. S.*]

Stipiturus malacurus Shaw.

Stipiturus malachurus Math. p. 79.

a, b. ♀ et juv. Chockerup, 24th Jan.

c–h. ♂ ♀. Big Grove, 9th March–23rd April.

Iris dark brown or hazel; bill blackish-brown, paler at the gape; legs brown.

Total length, measured in the flesh, 6–8¼ inches.

The birds collected by Mr. Shortridge in Western and South-western Australia, between the months of January and April, have the feathers of the mantle edged with gray, with a very small admixture of yellowish or buff, while the rufous on the forehead and crown of male birds is much less pronounced. Specimens in the British Museum from

Queensland, New South Wales (the type locality), and South Australia have the margins of the feathers of the mantle mostly buff, giving a somewhat warmer tint to these parts, while in the males the forehead and crown are nearly uniform dull rufous. As the whole of the series in the British Museum lacks exact particulars—in no instance is the date recorded—I hesitate to separate this greyer western form from the typical *S. malacurus*, for the differences pointed out may be purely seasonal, the brighter birds being perhaps merely freshly moulted examples.

A supposed new species, *S. mallee*, has been recently described by Mr. A. J. Campbell, from the Mallee district, Victoria.

[The Emu-Wren was fairly plentiful around Albany and generally frequented the swampy flats.—*G. C. S.*]

MALURUS SPLENDENS (Quoy & Gaim.).

Malurus splendens Math. p. 78.

a–c. ♂ ♀. Arthur River, 26th & 27th June (winter plumage).

d, e. ♂. Dale River, 15th Dec. & 8th Jan. (summer plumage).

f. ♂. Avon River, 12th Jan. (summer plumage).

Iris dark brown; bill black in the male, bright chestnut in the female; legs blackish-brown.

Total length, measured in the flesh, 5·25–5·5 inches.

In one female (specimen *b*) the outer webs of the quills are edged with greenish-blue, in the other (*c*) they are edged with brownish-white: the latter is possibly a younger bird.

[The Banded Superb Warbler is fairly plentiful in the south-west, as far south as Busselton. I did not meet with it in Albany, and it does not extend into the interior.—*G. C. S.*]

MALURUS LEUCOPTERUS Quoy & Gaim.

Malurus leucopterus Math. p. 78.

a–d. ♂ et ♂ imm. Crookerdine Lake, 24th & 25th July (winter plumage).

e–h. ♂ ♀ et juv. Kurrawang, 16th–23rd Sept. (summer plumage).

i. ♂ imm. Hawksnest, 1st Nov.

k, l. ♂. Clifton Downs, 9th & 16th Oct. (summer plumage).

Iris dark brown; bill black in the male, pinkish-chestnut, dusky at the tip, in the female; feet brown or olive-brown.

Malurus leuconotus Gould.

Malurus leuconotus Math. p. 78.

a, b. ♂ et ♂ imm. Carnarvon, 2nd & 21st Aug. (summer plumage).

Bill blackish-brown in the adult, of a flesh-colour, tinged with chestnut and brownish along the culmen, in the young bird.

I am by no means satisfied that *M. leuconotus* is really distinct from *M. leucopterus*. The adult male from Carnarvon agrees with the former in having the crown and breast deep cobalt-blue (instead of purplish-blue) and the white extending across the back. Mr. North ('Nests and Eggs of Birds found breeding in Australia and Tasmania,' p. 217) states that he is inclined to share this opinion, as both forms occur in the same locality.

Malurus elegans Gould.

Malurus elegans Math. p. 78.

a–c. ♀. Big Grove, 7th–25th March.

Iris brown; bill black or very dark brown; feet dark brown.

Total length, measured in the flesh, 6·0–6·5 inches.

[The Graceful Superb Warbler was observed round Busselton and in the vicinity of the Margaret River.—*G. C. S.*]

Malurus assimilis North.

Malurus assimilis Math. p. 78.

a–c. ♂ ♀. Laverton, 17th & 26th Oct.

d–i. ♂ ♀. Clifton Downs, 21st Sept.–15th Oct.

Iris dark brown; bill black in the male, chestnut, dusky at the tip, in the female; legs dusky-brown in the male, light slate-colour in the female.

The total length, measured in the flesh, varies from 5–5·75 inches.

This western form of *M. lamberti* Vig. & Horsf. is distinguished by having the feathers of the middle of the back purplish-blue instead of cobalt-blue.

[According to Mr. Milligan, this species is much less shy than *M. pulcherrimus*, and has an entirely different call-note. --*G. C. S.*]

MALURUS BERNIERI. (Plate IX. figs. 2 & 3.)

Malurus bernieri Grant, Bull. B. O. C. xxiii. p. 72 (1909).

Adult male. Nearly allied to *M. assimilis* North, but the feathers round the eye and the ear-coverts are bright purplish-blue (not bright cobalt-blue) and contrast but little with the darker purple-blue colour of the crown, which is the same in both species. Bill black; wing 1·8 inch.

Adult female. Indistinguishable from the female of *M. lamberti.*

Iris dark brown; bill light chestnut; legs dark cinnamon-brown.

Total length, measured in the flesh, 5·25 inches.

a–c. ♂ ♀. Bernier Island, 22nd June & 12th July. (*Types of the species*: in summer plumage.)

In both male examples the tail is incomplete. It is rather curious that although they were killed in June and July respectively, that is to say in mid-winter, both are in summer plumage.

MALURUS PULCHERRIMUS Gould.

Malurus pulcherrimus Math. p. 79.

a. ♂. Kurrawang, 6th Sept. (summer plumage).

b. ♂. Stockpool, 25th Jan. (assuming winter plumage).

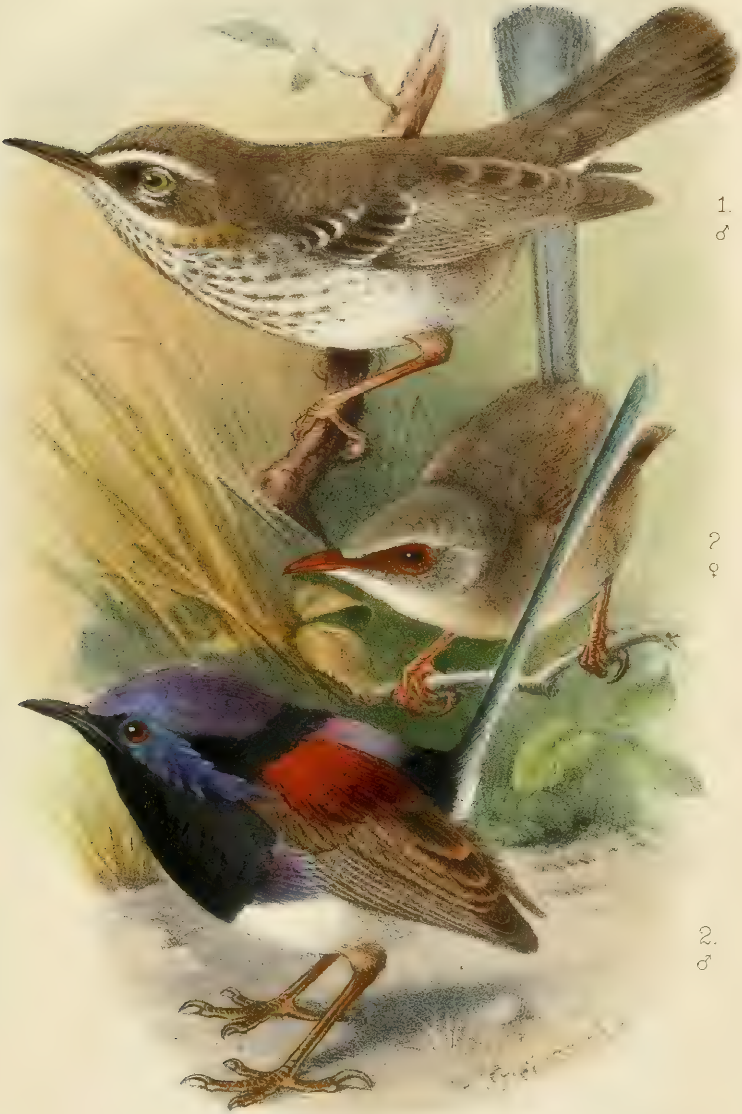
c–e. ♂ ♀. Dwaladine, 4th & 5th March (assuming winter plumage).

f. ♀. Dale River, 15 Dec.

Iris dark brown; bill black in the male, chestnut in the female; feet dark brown or olive-brown.

Total length, measured in the flesh, 5·2–5·75 inches.

One male (specimen *b*) killed in September is still in partial summer plumage on the head, back, and scapulars; while *c* and *d*, procured on March 4th, have nearly assumed the change plumage.



West, Newman imp.

1. SERICORNIS BALSTONI, ♂
2. MALURUS BERNIERI, ♂ & ♀.

[The Blue-breasted Superb Warbler is very similar to *M. assimilis* in its general habits and appearance, but is much more shy and always frequents the very thickest undergrowth.—*G. C. S.*]

SERICORNIS BRUNNEA Gould.

Sericornis brunnea Math. p. 76.

a–f. ♂ ♀. Crookerdine Lake, 17th–25th July.
g–i. ♂ ♀. Kurrawang, 3rd & 7th Sept.
k. ♀. Hawksnest, 12th Nov.
l. ♂. Carnarvon, 5th Aug.
m. ♀. Clifton Downs, 9th Oct.

Iris hazel or dull red, outer ring buff; bill olive-brown, pinkish on lower mandible; legs dark brown.

Total length, measured in the flesh, 5·25.

[The "Red-throat" was plentiful in the central and western divisions.—*G. C. S.*]

SERICORNIS MACULATA Gould.

Sericornis maculata Math. p. 77.

a–d. ♂ ♀ et ♀ imm. Big Grove, 9th March–10th April.
e. ♂. Margaret River, 1st March.

Iris pale yellow; bill brown, lower mandible paler; legs brown.

Total length, measured in the flesh, 5–5·25 inches.

An immature bird has few black markings on the feathers of the throat and fore-neck and they take the form of narrow shaft-streaks, instead of black middles; the white eyebrow-stripe is much less defined.

[The Striated Scrub-Wren was met with in the south-west. It inhabits the forests, frequenting the thick undergrowth. It does not extend its range far inland.—*G. C. S.*]

SERICORNIS BALSTONI. (Plate IX. fig. 1.)

Sericornis balstoni Grant, Bull. B. O. C. xxiii. p. 72 (1909)

Adult male and female (in worn plumage). General colour above, including the sides of the head, pale greyish-brown, almost drab. A distinct white superciliary stripe narrowly edged above with brownish-black and extending from the lores to behind the eyes; lores blackish in the male, whitish in the female. Under parts white, the throat- and breast-feathers with brownish-black shaft-streaks; sides of the belly and flanks slightly washed with buff; quills brownish with pale margins to the outer webs; wing-coverts blackish-brown, margined with white when freshly moulted; under wing-coverts white; tail-feathers dark grey, with a black sub-terminal band and tipped with white.

Iris yellowish-white; bill pinkish-cinnamon-brown, darker along the culmen; legs pinkish-cinnamon.

♂. Total length, measured in the flesh, 5·0 inches; culmen from gape 0·65; wing 2·05; tail 1·8; tarsus 0·8.

♀. Total length, measured in the flesh, 4·5 inches; culmen from gape 0·6; wing 1·85; tail 1·65; tarsus 0·78.

a–h. ♂ ♀. Bernier Island, 23rd June – 6th July. (Including *types of the species*.)

[Balston's Scrub-Wren was fairly plentiful on Bernier Island. It was also believed to have been seen around Carnarvon.—*G. C. S.*]

ACANTHIZA INORNATA (Gould).

Acanthiza inornata Math. p. 74.

Ad. Dale River, 8th Jan.

Iris pale yellow.

This paler bird from Beverley, W. Australia, bears out the distinctions pointed out by Mr. North between this species and *A. mastersi* North.

ACANTHIZA MASTERSI North.

Acanthiza mastersi Math. p. 75.

a–d. ♂ et imm. King River, 7th Dec.–15th Feb.

Iris pale straw-yellow in the adult; grey or greenish-white in the young; bill black; legs dark brown.

Immature examples differ from the adult in having the feathers of the throat and fore-neck with narrow dusky margins, the general colour above darker brown, the rump and upper tail-coverts reddish olive-brown, instead of olive-brown, and the greater wing-coverts edged with rufous.

[Masters' Thorn-Bill was abundant in the south-west.—*G. C. S.*]

ACANTHIZA APICALIS Gould.

Acanthiza apicalis Math. p. 75.

a–c. ♂. King River, 9th–14th Dec.

d–f. ♂ ♀. Big Grove, 27th March–2nd May.

g. ♂. Emu Point, 28th Feb.

h, i. ♂ ♀. Parker's Range, 7th & 8th Aug.

k. ♂. Kurrawang, 6th Sept.

Iris brownish-red or crimson; bill and legs of a dark horn-colour or dusky black.

Total length, measured in the flesh, 4·5 inches.

The Western Thorn-Bill is very abundant in the south-west, but less plentiful than *A. uropygialis* in the interior.

ACANTHIZA UROPYGIALIS Gould.

Acanthiza uropygialis Math. p. 75.

a–c. ♂ ♀. Crookerdine Lake, 17th–24th July.

d–f. ♂ ♀. Parker's Range, 10th Aug.

g–i. ♂ ♀ et imm. Kurrawang, 6th–11th Sept.

k. Imm. Laverton, 18th Oct.

Adult. Iris of a pale cream- or straw-colour; bill dusky black; legs very dark brown.

Immature. Iris dark bluish-grey; bill dark brown; gape yellow; legs olive-brown.

[The Chestnut-rumped Thorn-Bill was very plentiful in the interior. It is the only species that extends so far north as the Gascoyne River, where, however, it is rare. Unlike the other western forms, *A. uropygialis* is confined to the dry central districts, and does not extend to the coast in the south-west. It also differs from the other species in its nesting-habits—building in the crevices or hollows of low tree-stumps.—*G. C. S.*]

ACANTHIZA CHRYSORRHOA Quoy & Gaim.

Acanthiza chrysorrhoa Math. p. 74.

a–d. Ad. et imm. King River, 15th Dec.–16th Feb.

e. ♂. Chockerup, 24th Jan.

f. Ad. Big Grove, 23rd March.

g, h. ♂ ♀. Crookerdine Lake, 20th & 27th July.

i. ♀. Kurrawang, 4th Oct.

k. Ad. Dale River, 18th Dec.

Iris greyish-brown, brown, or buff; bill black; legs slaty-black.

Total length, measured in the flesh, 4·5–5 inches.

All these specimens appear to belong to *A. chrysorrhoa*. Mr. Milligan has described a new form, *A. pallida*, from Yalgoo, but the Coolgardie birds do not appear to be referable to it and differ in no way from examples from King George's Sound.

[The Yellow-rumped Thorn-Bill was very numerous in the south-west, extending as far inland as Kalgoorlie.—*G. C. S.*]

MEGALURUS GRAMINEUS (Gould).

Megalurus gramineus Math. p. 74.

a. ♂. Big Grove, 28th March.

Iris hazel; bill of a horn-colour with the cutting-edges buff; legs light slaty.

The Little Grass-bird is a shy species, frequenting the reed-beds and high grass. *M. striatus* Milligan [*cf.* 'Emu,' ii. p. 202 (1903)], from Lake Yauchep, 35 miles north of Perth, W. Australia, appears to be a distinct species.

EPHTHIANURA ALBIFRONS Jard. & Selby.

Ephthianura albifrons Math. p. 73.

a–e. ♂ et imm. King River, 8th Dec.–14th Jan.

f. ♂. Crookerdine Lake, 30th July.

g, h. ♂ ♀. Parker's Range, 10th & 11th Aug.

i, k. ♂ et ♀ imm. Kurrawang, 2nd & 16th Sept.

Iris buff or reddish-buff; bill and legs black.

Total length, measured in the flesh, 5 inches.

[The White-fronted Nun is gregarious in its habits. It was plentiful throughout the south-west and numbers were observed as far inland as Kalgoorlie.—*G. C. S.*]

EPHTHIANURA TRICOLOR Gould.

Ephthianura tricolor Math. p. 73.

a. ♀. Kurrawang, 16th Sept.

l–r. ♂ ♀ et ♀ imm. Laverton, 13th–26th Oct.

Iris pale buff or pale yellow; bill dark brown, basal part of the lower mandible of a flesh-colour; legs brown.

Total length, measured in the flesh, 4·75 to 5 inches.

[Like the last-named species the Crimson-breasted Nun is gregarious in its habits. It wanders about and appears rather irregularly, especially in the south and west. It becomes more plentiful towards the interior and was observed in large numbers round Laverton.—*G. C. S.*]

CINCLORHAMPHUS CRURALIS Vig. & Horsf.

Cinclorhamphus cruralis Math. p. 72.

a–c. ♂ ♀. Laverton, 14th–22nd Oct.

Iris olive-brown; bill olive-brown, basal half of the lower mandible buff; legs of a brownish-flesh-colour.

Total length, measured in the flesh:—male, 7·5; female, 7·5–7·75 inches.

The specimens of the Brown Singing-Lark collected at Laverton have the plumage of the under parts much discoloured by the reddish colour of the soil.

POMATORHINUS SUPERCILIOSUS Vig. & Horsf.

Pomatorhinus superciliosus Math. p. 70.

a. ♀. Arthur River, 24th June.
b–f. ♂ ♀. Crookerdine Lake, 19th–30th July.
g, *h.* ♂. Kurrawang, 7th & 8th Sept.
i. ♂. Laverton, 18th Oct.
k. ♀. Clifton Downs, 15th Oct.

Iris dark brown or hazel; bill black, whitish at the base of the lower mandible, inside of the mouth yellow; legs of a slate-colour.

Total length, measured in the flesh, 7·75–8·5 inches.

The specimen from Clifton Downs, Gascoyne River, appears to represent a somewhat smaller race. Its wing measures 2·8 inches, as compared with about 3·2 inches in the other specimens procured in more southern localities.

[The White-eyebrowed Chatterer is gregarious in its habits and is very plentiful both in the central divisions and in parts of the south-west. It is commonly known among the colonists as the "Apostle-bird," on account of its habit of going about in small companies of about twelve.—*G. C. S.*]

POMATORHINUS RUBECULUS Gould.

Pomatorhinus rubeculus Math. p. 71.

a–h. ♂ ♀. Clifton Downs, 21st Sept.–16th Oct.

Iris pale yellow; bill black, whitish at the base of the culmen and lower mandible; legs slate-black.

Total length, measured in the flesh, 9·5–10·5 inches.

[The Rufous-breasted Chatterer is gregarious in its habits and is very plentiful on the Upper Gascoyne River.—*G. C. S.*]

HYLACOLA CAUTA Gould.

Hylacola cauta Math. p. 70.

a, b. ♂ ♀ (?). Kurrawang, 3rd & 23rd Sept.

Male. Iris brownish-buff; bill olivaceous-brown; legs pinkish.

? *Female.* Iris buff; bill dark brown; legs brown.

Total length, measured in the flesh, 5·25–5·5 inches.

The Shy Scrub-Warbler appears to be a rare bird and difficult to procure: even in Australian museums there seem to be very few examples.

Specimen *b*, which, though marked as a male, I believe to be a female, has the upper parts reddish-brown, whereas in the male *a* they are umber-brown: in *a* the ground-colour of the under parts is pale fulvous instead of white.

This species was not previously represented in the British Museum.

DRYMAŒDUS BRUNNEOPYGIUS Gould.

Drymaœdus brunneipygius Math. p. 70.

a. ♀. Dwaladine, 4th March.

Bill dull black; legs dark brown.

Total length, measured in the flesh, 8·0 inches.

[The Scrub-Robin is a very shy bird: it was met with among thick undergrowth.—*G. C. S.*]

CINCLOSOMA CASTANONOTUM Gould.

Cinclosoma castanonotum Math. p. 69.

a. ♀. Parker's Range, 7th Aug.

b. ♀. Dwaladine, 17th Feb.

c, d. ♂ ♀. Woyaline, 18th April.

Iris reddish-brown; bill black; legs of a slate-colour.

Total length, measured in the flesh, 9·75 inches.

The female of this species is new to the British Museum, which contained only adult male specimens. The male bird procured by Mr. Shortridge is probably not fully adult. The scapulars are reddish-brown and the lower back chestnut, whereas in the fully adult bird these parts are maroon. The greater secondary coverts are entirely black tipped with white and are not light along the margin of the outer web. Our series is insufficient to shew whether these differences are due to age or to locality.

[The Chestnut-backed Ground-Thrush is a ground-feeder and a swift runner; it is met with in pairs.—*G. C. S.*]

LALAGE TRICOLOR Swainson.

Lalage tricolor Math. p. 68.

a–f. ♂ ♀. Kurrawang, 18th Sept.–3rd Oct.

g–l. ♂ ♀. Laverton, 14th–26th Oct.

m. ♀. Dale River, 19th Dec.

Iris dark brown or of a dark slate-colour; bill black in the male, dusky-black, with the lower mandible dull yellowish at the base, in the female; legs of a slate-colour.

Total length, measured in the flesh, 6·75–7·75 inches.

[The White-shouldered Caterpillar-Catcher is a locally distributed migratory species, very plentiful where it occurs, but rare on the Gascoyne River. It is generally met with in pairs.—*G. C. S.*]

GRAUCALUS MELANOPS (Lath.).

Coracina robusta Lath.; Math. p. 68.

a, b. ♂. King River, 8th & 27th Dec.

c, d. ♂ et imm. Big Grove, 13th & 15th April.

e, f. ♂ ♀. Parker's Range, 11th Aug.

g–k. ♂ ♀. Kurrawang, 3rd–18th Sept.

l. ? ♀ vix ad. Laverton, 15th Oct.

m, n. ♂ et juv. Clifton Downs, 6th & 11th Oct.

Iris, bill, and legs black.

The total length, measured in the flesh, varies from 13–14 inches.

The quite young specimen (*n*) with half-grown quills is much lighter in colour than the adult, the upperparts being whitish tinged with grey.

[The Black-faced Cuckoo-Shrike is very plentiful and often gregarious, but does not breed in colonies. It is locally known as the "Blue Pigeon."—*G. C. S.*]

PTEROPODOCYS PHASIANELLA Gould.

Pteropodocys phasianella Math. p. 67.

a–d. ♂ ♀. Kurrawang, 8th Sept. & 4th Oct.

Iris smoky grey or light grey; bill black; feet dark olive-brown.

The total length, measured in the flesh, varies from 14·75–15·25 inches.

[The Ground Cuckoo-Shrike is a local and by no means plentiful species, being rare in the south-west. At times it is gregarious, breeding in small colonies, generally in trees. It frequents well-timbered districts and feeds on the ground. In its flight it resembles the Black-faced Cuckoo-Shrike (*Graucalus melanops*).—*G. C. S.*]

SISURA INQUIETA (Lath.).

Sisura inquieta Math. p. 66.

a, b. ♂ et imm. King River, 27th Dec.

c–e. ♂ ♀. Big Grove, 27th March–8th April.

f. ♀ imm. Parker's Range, 16th Aug.

Iris dark brown; bill of a bluish-slate-colour, shading into black towards the tip; legs dark brown.

Total length, measured in the flesh, 8·5–9 inches.

[The Restless Flycatcher although so similar in general appearance to *Rhipidura tricolor* is very unlike that species in its habits. It is of a more retiring nature, and is generally to be found in thick forest-country. From the south-west it extends as far inland as Southern Cross.—*G. C. S.*]

RHIPIDURA PREISSI (Cab.).

Rhipidura preissi Math. p. 65.

a. Ad. King River, 7th Dec.

b. Imm. Chockerup, 25th Jan.

c–e. Ad. Big Grove, 8th April–1st May.

f. ♀ imm. Margaret River, 1st March.

g. Ad. Carnarvon, 5th Aug.

Iris dark brown; bill and legs dusky black.

The total length, measured in the flesh, varies from 6–6·25 inches.

[Preiss's Fantail, also known to the Colonists as the Grey Fantail, is abundant in the south-west, but in the north-west it is not plentiful and does not extend inland. It is somewhat similar in its habits to *R. tricolor*, but is not terrestrial. It is extraordinarily tame.—*G. C. S.*]

RHIPIDURA TRICOLOR (Vieill.).

Rhipidura tricolor Math. p. 66; Seth-Smith, Av. Mag. (n. s.) vii. no. 7, pl. (1909).

a–d. ♂ ♀. Arthur River, 17th–28th June.

e–h. ♂ ♀. Kurrawang, 18th Sept.–1st Oct.

i. ♂. Laverton, 26th Oct.

Iris dark brown; bill and feet black.

The total length, measured in the flesh, varies from 8–9 inches.

[The Black-and-White Fantail is a very abundant species, but, curiously enough, does not occur round Albany, although it is numerous in the neighbourhood of Busselton.

It is an extraordinarily tame bird, and its habit of attaching itself to populated districts makes it one of the best known and most conspicuous of the smaller birds of Western Australia.—*G. C. S.*]

PSEUDOGERYGONE CULICIVORA (Gould).

Pseudogerygone culicivora Math. p. 63.

a, b. ♂. King River, 18th Dec. & 1st Jan.

c, d. ♂ ♀. Arthur River, 18th & 22nd June.

Iris crimson; bill and feet black.

The total length, in the flesh, varies from 4·25–4·5 inches.

[The White-tailed Bush-Warbler is fairly plentiful in the south-west. Its habits resemble those of a true Flycatcher.—*G. C. S.*]

SMICRORNIS BREVIROSTRIS Gould.

Smicrornis brevirostris Math. p. 62.

a. Ad. Dwaladine, 4th March.

b–f. ♂ ♀. Crookerdine Lake, 18th–24th July.

g, h. ♂ ♀. Parker's Range, 10th Aug.

i. Ad. Kurrawang, 6th Sept.

k. Ad. Hawksnest, 3rd. Nov.

Iris of a straw-colour; bill olive-brown, pinkish below; legs brown.

Total length, measured in the flesh, 3·5–3·75 inches.

In the British Museum there are three examples of *S. flavescens* Gould:—

(*a*) ♂. Fitzroy River, N.W. Australia (*Capt. T. H. Bowyer-Bower*).

(*b*) ♂. Peak Range Camp, 27.i.45: Port Essington Expedition (*Gould Coll.*).

(*c*) ♂. Gilbert River, N. Queensland, 3.x.56 (*J. R. Elsey*).

These specimens are distinguishable from *S. brevirostris* by their lighter olive back and yellowish rump.

[The Short-billed Scrub-Tit was very plentiful in the central and south-western divisions and was observed as far south as Wagin.

It chiefly frequents the high Eucalyptus-trees, among the leaves of which it may often be overlooked. It closely resembles the species of *Pardalotus* in its habits.—*G. C. S.*]

PETRŒCA LEGGII Sharpe.

Petræca leggei Math. p. 61.

Petrœca campbelli Sharpe; Math. p. 62.

a–f. ♂ ♀ et ♂ imm. King River, 8th Dec.–15th Feb.

g. ♀. Big Grove, 21st April.

h. ♂. Little Grove, 10th April.
i. ♂. Dale River, 4th Jan.

Iris dark brown; bill and legs very dark brown.

The total length, measured in the flesh, varies from 5·1–5·5 inches.

I do not think it is possible to distinguish the West Australian bird from typical *P. leggii.*

[The Scarlet-breasted "Robin" is plentiful in the south-west, but does not occur in the interior, its place being taken by *P. goodenovii.—G. C. S.*]

PETRŒCA GOODENOVII Vig. & Horsf.

Petrœca goodenovii Math. p. 62.

a–e. ♂ ♀. Arthur River, 18th–25th June.
f. ♂ imm. Dale River, 20th Dec.
g. ♂. Avon River, 2nd Jan.
h–o. ♂ ♀ et ♂ imm. Crookerdine Lake, 18th–26th July.
p–s. ♂ ♀. Kurrawang, 11th–16th Sept.
t. imm. Laverton, 25th Oct.

Iris dark brown; bill and feet black; soles of feet yellow.

The total length, measured in the flesh, varies from 4·5–4·75 inches.

All these specimens appear to belong to *P. goodenovii.* Two or three of the males shew traces of scarlet on the middle of the throat and thus approach the form *P. ramsayi* of Sharpe, which has the middle of the throat mostly scarlet. There are examples of *P. ramsayi* in the British Museum from Western and Southern Australia.

[The Red-capped "Robin" is very abundant in the central districts, but becomes scarce towards the coast, where it is replaced by *P. leggii.* In many places a short distance inland, such as Beverley and Wagin, both species occur together. Its boundary in the south-west appears to be Kojonup, and it is rare as far north as the Gascoyne River. It is said to occur on Rottnest and the Abrolhos Islands, which is curious, especially as regards the first-named island, as it is not a coastal species on the south-western mainland.—*G. C. S.*]

PETRŒCA BICOLOR Vig. & Horsf.

Petrœca bicolor Math. p. 62.

a. ♀. Parker's Range, 18th Aug.

b–d. ♂ ♀. Crookerdine Lake, 19th–26th July.

e–l. ♂ ♀ et ♂ imm. Kurrawang, 2nd–22nd Sept.

m, n. ♂. Laverton, 16th & 19th Oct.

o. ♂. Dwaladine, 26th Feb.

Iris dark brown; bill black; legs black in the male, dark brown in the female.

The total length, measured in the flesh, varies from 6·5–7 inches.

The present series contains specimens which are referable to *P. picata* Gould, as defined by Dr. Hartert (*cf.* Nov. Zool. xii. p. 220). They occur together with *P. bicolor* at Crookerdine Lake, &c. According to Dr. Hartert intermediate examples occur in South-western Australia, and this is certainly the case in the present collection. The chief difference seems to be one of size, typical *P. bicolor* being distinctly larger.

[The Hooded "Robin," like *P. goodenovii*, is plentiful in the interior, but becomes less common towards the coast.—*G. C. S.*]

MICRŒCA ASSIMILIS Gould.

Micrœca assimilis Math. p. 61.

a–c. ♂ ♀. Arthur River, 21st & 30th June.

d, e. ♂. Crookerdine Lake, 23rd & 24th July.

f, g. ♂ ♀. Parker's Range, 10th Aug.

h. ♀. Kurrawang, 2nd Sept.

i. ♀ imm. Dwaladine, 21st Feb.

Iris dark brown; bill black; legs very dark brown.

The total length, measured in the flesh, varies from 5·0–5·75 inches.

[The Lesser Brown Flycatcher is plentiful in the south-western and central districts.—*G. C. S.*]

PETROCHELIDON NIGRICANS Vieill.

Petrochelidon nigricans Math. p. 61.

a, b. ♂. King River, 7th Feb.

c–e. ♂ ♀. Dale River, 30th Dec.–4th Jan.

f. Ad. Carnarvon, 5th Aug.

g–i. ♂. Clifton Downs, 7th & 9th Oct.

Iris dark brown; bill dusky-black, yellowish at the gape; legs brown.

[The Tree-Swallow was very plentiful in the southern and north-western districts, but did not extend very far inland. It nests in small hollow branches at the tops of trees and, very rarely, in clefts among the cliffs. I once noticed it breeding inside a ventilator under the roof of a house.—*G. C. S.*]

PETROCHELIDON ARIEL Gould.

Petrochelidon ariel Math. p. 61.

a–c. ♂ ♀. Waggon Hill, 14th Sept.

Iris dark brown; bill black; legs dark brown.

[The Fairy-Martin was local, but was fairly plentiful in some localities on the Gascoyne River. It makes its curious retort-shaped nests against sand-banks or cliffs.—*G. C. S.*]

CHERAMŒCA LEUCOSTERNUM Gould.

Cheramœca leucosternum Math. p. 61.

a. ♀. Parker's Range, 10th Aug.

b–g. ♂ ♀ et ♀ imm. Hawksnest, 2nd–6th Nov.

h. ♀. Carnarvon. 5th Aug.

Iris dark brown; bill black; legs brown.

[The White-backed Swallow was fairly plentiful in the north-western and central districts, nesting in holes in cliffs and sand-banks.—*G. C. S.*]

HIRUNDO NEOXENA Gould.

Hirundo neoxena, Math. p. 60.

a, b. ♀. King River, 22nd Dec. & 21st Jan.

c–k. ♂ ♀. Bernier Island, 19th June–4th July.

Iris dark brown; bill and legs black or dark brown.

Total length, measured in the flesh, 6·2–6·75 inches.

[The Welcome Swallow was very plentiful: it was not observed further inland than Southern Cross.—*G. C. S.*]

[To be continued.]

XXXV.—*Description of a new Bird from Africa.*

By the Hon. WALTER ROTHSCHILD, Ph.D., F.Z.S., M.B.O.U.

(Plate X.)

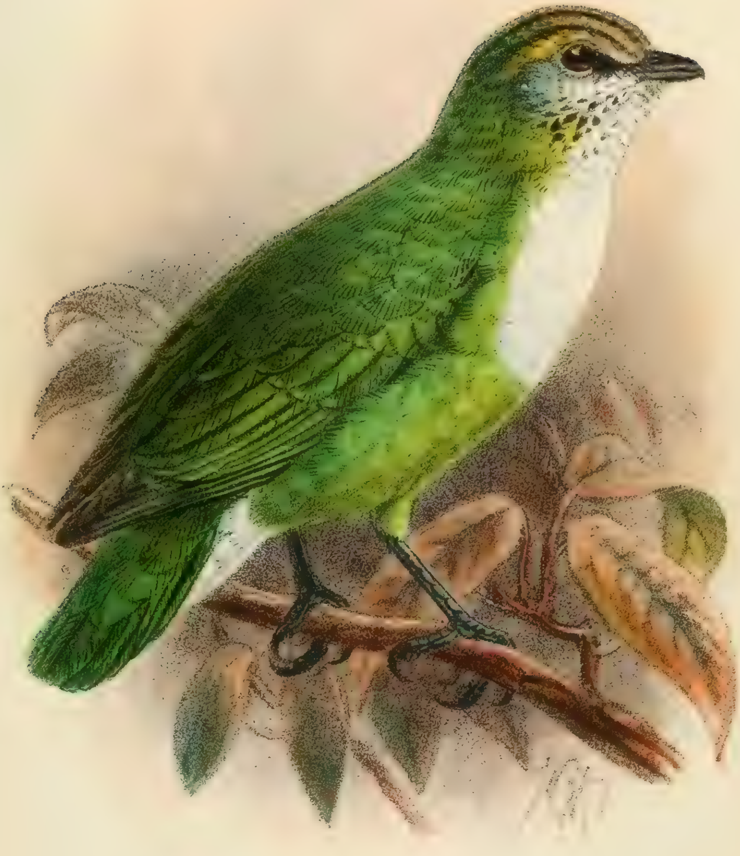
PSEUDOCALYPTOMENA, gen. nov.

Bill apparently hard, very wide, like that of a *Serilophus* (family Eurylæmidæ), but more pointed, slightly hooked and with a deep notch before the tip. Nostrils bare of feathers and with a distinct operculum. Only a few thin and short bristles below the lores. Wing with ten primaries; third and fourth equal and longest, fifth very little shorter, first, in length, between the sixth and seventh. Second to fifth distinctly emarginated for about 25 mm. from the tip. Longest secondaries about 15 mm. shorter than longest primaries. Tail rounded, slightly longer than half the wing. Number of rectrices 12. Tarsus scutellated in front.

The position of this remarkable bird is uncertain; it is apparently a very aberrant Flycatcher, in spite of its fully developed first primary, but at the first glance somewhat resembles a *Calyptomena* (Eurylæmidæ) on account of the shape of its bill, its short tail, and its green and blue colour, a combination of characters which is quite unique among African Passeres.

PSEUDOCALYPTOMENA GRAUERI, sp. n.

♂. Forehead to beyond the eyes greenish buff, each feather with a wide median brown streak; occiput and rest of upper surface, including the upper wing-coverts, bright grass-green. Remiges brownish black, edged with the colour of the back. Two central rectrices green, darker than the back, other rectrices with the outer webs like the two central ones, inner webs brownish black. Lores dull black. Throat and chest verditer-blue, cheeks with blackish spots, chin whitish with a creamy tinge, rest of under side apple-green; under tail-coverts verditer-blue; under wing-coverts whitish



West, Newman imp.

PSEUDOCALYPTOMENA GRAUERI, ♂.

green, inner edges of remiges pale fuscous. "Iris grey." Bill and feet black (in skin). Wing 75, culmen 10, tail 39, tarsus 19 mm.

The single specimen was obtained fifty miles west of Russisi, north of Lake Tanganyika, in November 1908, by Mr. Rudolf Grauer. It was found in bamboo-forest, about 2000 m. above the sea.

Type: No. 3956, in the Tring Museum, Grauer Collection.

XXXVI.—*The Report on the British Museum for* 1908.

The Annual Report on the British Museum for 1908, presented to Parliament by the Trustees, contains much interesting information concerning the National Collection of Birds at South Kensington, from which we extract the following passages:—

The Birds in the British Saloon have been re-arranged, and the old and faded specimens have been almost entirely replaced by new examples. One hundred and fifty-nine of these have been beautifully mounted and generously presented by Mr. Rowland Ward. Cases containing specimens of the Coal-Tit and Buffon's Skua have been added.

Some valuable additions have been made to the collection of skeletons and of birds in spirit; and among these, special mention may be made of the gifts of Birds-of-Paradise from Sir William Ingram, and of nestling Pelicans from Captain Stanley Flower, Director of the Zoological Gardens, Cairo.

The arrangement of the Passerine skeletons is now completed. Much curatorial work has been done to keep these collections in order, but the specimens in spirit are almost inaccessible owing to the want of suitable storage; while in regard to the skeleton-collection a very large number of old skeletons need to be replaced by new and properly prepared specimens.

A series of preparations illustrating the Classification of

Birds has been commenced for exhibition in the public galleries.

The accessions to the Collection of Birds in 1908 numbered two thousand nine hundred and twenty-one. Of these the most noteworthy were as follows :—

Six specimens of *Parus dresseri* and *P. borealis* from Gloucestershire ; presented by G. H. Paddock, Esq.

Six examples of *Charadrius morinellus*, and two specimens of *Pelecanus onocrotalus* ; presented by the Hon. N. C. Rothschild.

Eighty-two birds from Borneo ; presented by the British North Borneo Company. Twenty-eight birds from Shan-Si ; presented by Dr. E. H. Edwards. One hundred and thirty-three birds from Upper Burmah ; purchased of Messrs. Gerrard & Sons. Fifty-seven birds and eggs from Burmah ; presented by Major H. H. Harington. Two specimens of *Microperdix inglisi*—types of the species ; presented by Mr. Charles M. Inglis. Two hundred and eighty-eight birds from Tian Shan ; purchased of Mr. Kutzenko. Sixty-six birds, chiefly from Bannu, N.W. India (including the type of *Molpastes magrathi*) ; presented by Major H. A. F. Magrath. Two females of *Calophasis burmanicus* (from the Ruby Mines, Burmah) and one example of *Clangula glaucion* ; presented by Mr. E. W. Oates. Nests with eggs of *Geocichla varia* and *G. sibirica* from Japan ; presented by Mr. Radcliffe Saunders. Three hundred and nine birds from Kohat, N.W. Provinces, India ; presented by Lieut. C. H. T. Whitehead.

Two hundred and forty-one birds from Cameroon—including the types of six new species—collected by Mr. G. L. Bates ; purchased. Twenty-five eggs from Bitye, River Ja, Cameroon ; presented by Mr. G. L. Bates. A specimen of *Pitta reichenowi* from Jinja, 15 miles west of the Ripon Falls, Uganda ; presented by Dr. Cuthbert Christy. One hundred and twenty-five birds, collected by Captain Hamerton in Somaliland ; purchased. Two examples of *Scotocerca inquieta* ; presented by Mr. M. J. Nicoll. Thirty-two birds from Liberia ; presented by Mr. J. M.

Pye-Smith. Type-specimens of *Poliospiza mennelli* and *Pinarornis rhodesiæ*; presented by the Trustees of the Rhodesian Museum. An example of *Colius kirbyi,* from Lydenburg, E. Transvaal (type of the species); purchased.

Two hundred and forty-three birds from Paraguay; presented by the Hon. Wyndham Knatchbull-Hugessen.

Examples of *Paradisea minor, Cicinnurus regius,* and *Diphyllodes hunsteini* from S.E. New Guinea; presented by Sir William Ingram. Ninety-four birds from New Guinea, collected by Mr. Walter Goodfellow; purchased.

Fourteen birds from New Zealand, including the type of *Pseudogerygone macleani*; presented by Mr. J. C. McLean.

In addition to the official catalogues and other volumes published by the Trustees, various reports and descriptive papers have been prepared by members of the B.M. staff in connection with different branches of the Collections, and have been published in various scientific journals. Those referring to the Class of Birds are entitled as follows:—

"Additional Notes on the Birds of Formosa"; "On Two supposed Hybrids between the Red Grouse and Ptarmigan"; "On a Collection of Birds made by Mr. Douglas Carruthers during his journey from Uganda to the mouth of the Congo"; "Remarks on some of the Birds recently described as new by Prof. Neumann"; "On two new Species of Grass-Warbler (*Cisticola belli* and *C. woosnami*) from S.E. Ruwenzori"; "On a new Species of Rail (*Saurothura buryi*) from Somaliland"; "On a new Species of Chat (*Saxicola hawkeri*) from the Sudan"; "On two new Species of Sun-bird (*Cinnyris seimundi*) from Fernando Po and (*C. batesi*) from S. Cameroon"; "On a new Species of Pucras Pheasant (*Pucrasia styani*) from Ichang, Central China"; "Report on the Immigrations of our Summer Residents in the Spring of 1907." These were written by Mr. W. R. Ogilvie-Grant.

"Nestling Birds and some of the Problems they Present"; "Note on the Late Nesting of the Bearded Tit"; "The Powder-down of the Heron"; "Note on the Chiff-Chaff in London"; "The Nest of the Ringed Plover and the bearing thereof on the Evolution of Birds' Nests in General"; "On the Food of the Black-headed Gull"; "On the Position of the Ear in the Woodcock." All these were prepared by Mr. W. P. Pycraft.

We quite appreciate the value of this information, but venture to remark that this list would have been much more useful, "for convenience of reference," if the Journals in which these papers have been published had been exactly specified.

XXXVII.—*Notices of recent Ornithological Publications.*

[Continued from p. 560.]

81. '*Annals of Scottish Natural History.*'

[The Annals of Scottish Natural History, a Quarterly Magazine with which is incorporated 'The Scottish Naturalist,' April and July, 1909.]

So long as Mr. Eagle Clarke continues his investigations on the migration of birds at Fair Isle, his papers will always be likely to form the main point of interest in our contemporary. His fourth report, in the April number, consists of observations during the year 1908, while he tells us that he has now succeeded in arranging for a permanent observer and a day to day record. George Stout, who has aided him so efficiently in the past, will be the first occupant of the post. The latest results are sufficiently remarkable, no less than 106 species having been noticed on the northward passage in spring, and 122 on the southward passage in autumn, but of these 89 were met with at both seasons. The greatest prize was an example of Savi's Warbler (*Locustella luscinioides*), the first recorded in Britain for over 50 years; next we have the second British (= Scottish) specimen of the Subalpine Warbler. Species new to Scotland are *Anthus cervinus*, *Hypolais icterina*, and *Accentor collaris*; those occurring for the second time are *Loxia bifasciata*, *Emberiza rustica*, and *Tringa temmincki*. Several specimens of *Sylvia nisoria* were identified, besides other uncommon species not included in the paper, which only deals with those new to the fauna of the island. The correct identification of *Phylloscopus borealis* is referred to both on p. 73 and p. 114.

Mr. Clarke also reports on an example of Brünnich's Guillemot picked up at Craigielaw Point, E. Lothian, in December 1908; and in the July number Mr. F. W. Smalley discusses at length the seasonal changes of plumage in the Great Northern Diver, which he illustrates by a plate shewing the various features at different seasons. In the "Zoological Notes" we are informed that Prof. J. Arthur Thomson is to direct an enquiry on migration at Aberdeen, the method being that of putting a ring on the bird's leg.

82. '*Annals of the Transvaal Museum.*'

[Annals of the Transvaal Museum, vol. i. Pretoria. No. 1, April, 1908; No. 2, Aug. 1908; No. 3, Jan. 1909.]

The energetic officials of the Transvaal Museum at Pretoria have established a new zoological periodical, as will be seen by the heading, and have already issued three numbers of it. The first of these commences with "a short history" of the Museum prepared by Dr. J. W. H. Gunning, the Director, and illustrated by photographic plates of some of the cases and specimens. The Museum was first established in 1892, on the initiative of the State-Secretary of the (then) Republic, and has continued to prosper, in spite of some adverse circumstances, ever since. Dr. Gunning was appointed Director in 1896. The collection of birds (mostly admirably mounted by Mr. L. T. Griffin, now Taxidermist of the Auckland Museum, New Zealand, as the writer can testify from personal inspection) numbers upwards of 1,000 specimens besides some 3,700 skins, and well illustrates the Transvaal Avifauna.

In the first and second numbers of the new periodical there are no papers on birds. In the third number Dr. Gunning characterizes *Anthreptes reichenowii* (sp. nov.) from Beira, *Hemipteryx minuta* (sp. nov.) from the North-central Transvaal, and *Cossypha haagneri* (sp. nov.) from West

Pongoland, while Mr. Haagner gives descriptions of two new Flycatchers from Portuguese South-east Africa—which he names *Batis sheppardi* (sp. nov.) and *Sheppardia gunningi* (gen. et sp. nov.).

83. '*The Auk.*'

[The Auk. A Quarterly Journal of Ornithology. Vol. xxvi. Nos. 1, 2 (January and April, 1909).]

In No. 1 Mr. C. W. Richmond provides an important paper, namely the first part of "A Reprint of the Ornithological Writings of C. S. Rafinesque." As this author's pamphlets and papers are of great rarity, Mr. Richmond is doing a great service to Ornithology in reproducing them. He gives us on this occasion the bird portion of the 'Analyse' (1815), viz. pp. 61–72 and the additional matter. It will be seen that no less than 21 generic names are considered "citable in nomenclature" by the author, though opinions may differ on this point.

Mr. R. M. Anderson gives us an account of the nesting of *Bombycilla garrula* and *Dendrœca striata* at Fort Smith on the Slave River (pp. 10, 80); Mr. A. Brooks writes shortly on the Birds of Okanagan, British Columbia, and adds three species to the Canadian list, *Otus flammeola idahoensis*, *Aëronautes melanoleucos*, and *Oroscoptes montanus*; Mr. C. Sheldon furnishes a list of species observed on a hunting expedition to the Upper Toklat River, Alaska, of which *Heteractitis incana* is the most interesting; Mr. S. G. Jewett writes on some Birds of Baker Co., Oregon; Mr. G. Eifrig on the Winter Birds of New Ontario; Messrs. J. A. Weber and N. A. Wood on various Rails in New York City and Michigan; Mr. W. Palmer on "Instinctive Stillness in Birds" and Mr. Townshend on the House-Sparrow (pp. 13, 78). Mr. L. T. Cole cites an old letter of 1750 on the destruction of birds at Niagara Falls.

In No. 2 Dr. C. W. Townsend has an article on the position of birds' feet in flight, including many observations of his own; he comes to the conclusion that in full flight the feet are extended behind, except in the Passeres and perhaps the Pici and Macrochires, but that this is not always the case in short flights, when it takes a little time to get the legs into position. From Mr. B. S. Bowdish's account of the reports from "Audubon Wardens" in protected areas we gather that public opinion in the U.S. is more favourable to bird-preservation than formerly, and that the numbers of birds are increasing in most places, despite a cold and stormy breeding-season, but that gunners are still troublesome in Florida and minks destructive in Maine. Mr. A. H. Howell writes on the summer birds of Northern Georgia, where he acted in connexion with the Biological Survey, and visited the districts round Tate, Ellejay, and Young Harris. The country is described and a list of 76 species furnished, with short notes. Mr. T. J. Cole discusses "tagging" as a means of studying the movements of birds, and gives a plan for securing more definite data by the use of aluminium bands on the tarsus and the proper keeping of records. He seems unaware of the work in this direction carried out at Rossitten.

Mr. M'Coy furnishes new records and important range-extensions of Colorado birds. Mr. S. S. Visher has a paper on those of Western South Dakota, similar to that of Mr. Howell, with 194 species, but shorter notes. Mr. W. Brewster reports an undoubted Barrow's Golden-eye from Massachusetts and writes at length on former records of that bird. He also discusses the nomenclature of the Black Ducks, and substitutes *A. rubripes tristis* for *A. obscura rubripes*. Lastly, Mr. J. A. Allen gives a most interesting account of the "Habitat groups" in the American Museum of Natural History, which must be read to be fully appreciated, while the four plates give a good idea of the excellence of the arrangement.

A report of the twenty-sixth stated meeting of the A. O. U. is added to the January Number.

84. '*The Avicultural Magazine.*'

[Avicultural Magazine. The Journal of the Avicultural Society. New Series. Vol. vii. Nos. 6–10 (April–August, 1909).]

In these numbers perhaps we should first mention Mr. R. I. Pocock's account of the display of the cock Ostrich, described with more particularity than hitherto, and illustrated by a plate (August). Such cases must always be interesting as throwing light on Darwin's theory of sexual selection.

We have also (in May and July) the continuation of Mr. D. Seth-Smith's notes on his journeyings in Australia; he visited Fern-tree Gully in search of Lyre-birds, where he observed also other interesting species; he afterwards proceeded to Melbourne and Sydney and inspected the Zoological Gardens at the latter place. In the April number Mr. A. Trevor-Battye has a valuable article on his captive Great Bustards, their habits, food, and so forth; in June Mr. B. R. Horsbrugh writes on the "Birds of a Bloemfontein Garden"; and in July Messrs. Seth-Smith and F. Finn begin a series of papers on aviculture at the Zoological Gardens, which Mr. Finn continues in August. From such papers aviculturists who are not members of the Zoological Society will be able to mark the progress at the Gardens and to note the nidification of various species. In July also Mr. J. L. Bonhote gives his experiences of three months' stay in winter at the Giza Zoological Gardens.

Articles are furnished on many separate species: by Messrs. H. D. Astley (*Turdus fuscescens* and *T. pallasi*, col. pl.); T. H. Newman (*Phlogœnas crinigera*, coloured and black pls.); G. A. Perreau and W. E. Teschemaker (*Passer cinnamomeus*); W. E. Teschemaker (*Sycalis pelzelni*); R. Phillipps (*Rubigula dispar*, with a description of the egg, and *Monticola saxatilis*); N. F. Cockell (*Perdicula asiatica*, bred in Calcutta); C. Ingram (*Uragus sanguinolentus*); C. B. Smith (*Lagopus lagopus*); A. G. Butler (*Erythrura prasina*); D. Dewar (*Terpsiphone paradisi*); and E. W. Harper (*Stoparola melanops*, col. pl.). Mr. Astley has also a paper on the breeding of *Porphyrocephalus spurius* and a hybrid Stanley-Rosella Parakeet; and Mr. Finn supplies some notes on Indian Birds.

85. '*The Condor.*'

[The Condor, a Magazine of Western Ornithology. Vol. xi. Nos. 1, 2, 3, 4 (California).]

'The Condor' does not always reach us quite regularly.

But we have had the pleasure of receiving safely the first four numbers for this year, in which we find much of interest to Ornithologists, though of course specially to such of them as reside in the Western United States. The illustrations in the text are numerous and in most cases excellent.

We cannot mention all the contributors to these numbers, but may call attention to Mr. Austen's observations on the birds of the little State of Morelos in Southern Mexico and to Mr. Hanna's account of the nesting of the White-throated Swift (*Aëronautes melanoleucus*) on Stover Mountain in California as worthy of study. Mr. Wright's account of his Ornithological Trips to the Coronados Islands is well illustrated. The review of the "Mammals and Birds of the Alexander Expedition to Alaska in 1907" seems to shew that the results of the expedition were of special interest. The specimens of birds obtained were 512 in number, among which are six described as representing new species or subspecies. We have not yet been so fortunate as to see this volume, which has been lately published by the University of California's new Museum of Vertebrate Zoology.

86. *Dearborn on Birds from British East Africa.*

[Catalogue of a Collection of Birds from British East Africa. By Ned Dearborn, Assistant Curator of Ornithology. Field Mus. of N. H. Publ. 135. Orn. Series, Vol. i. No. 4 (Chicago, 1909).]

Mr. Dearborn catalogues the collection brought home by the Field Museum of Chicago's last expedition to British East Africa (1905–7) under the direction of Mr. C. E. Akeley. A map shews the various localities where the specimens were obtained. Their number is not exactly stated, but they are referred by the author to 228 species, of which one (*Alethe akeleyæ* from Mount Kenya) is described as new. Most of the species are well known.

87. '*The Emu.*'

[The Emu. A Quarterly Magazine to popularize the Study and Protection of Native Birds. Vol. viii. part 5; Vol. ix. part 1 (June, July, 1909).]

In the July part Mr. G. M. Mathews writes on the birds of North-west Australia and takes for his first instalment those of the Wyndham district, which includes hilly ridges, plains, and salt marshes. He gives us a list of 72 species, and adds notes, largely on the colour of the soft parts. Mr. H. W. Ford has a paper on the birds of the Yackandandah Creek Valley, Victoria; and Mr. A. G. Campbell one on the genus *Pardalotus,* in which the difference of the breeding-places and nests of the spotted and streak-headed members of the group should be specially noticed. Mr. R. Hall furnishes notes on *Gymnorhina*, its habits, notes, and nest, all of which are of considerable interest. Mr. W. E. Weatherill describes as a new species *Pseudogerygone cantator,* near *P. fusca,* from the coast and rivers of S.E. Queensland, and its nest and eggs.

In "Stray Feathers" are to be found some interesting notes on Aboriginal Names, on Wood-Swallows as honey-eaters, on the Blue Wren nesting in ivy (pl.) and the Pilot-bird; while Mr. Mattingley writes on the need of a standard colour-chart, and the Editors give us welcome news of the restrictions placed on bird-traffic in the Territory of Papua.

For a frontispiece we have a picture of the feeding-ground of the Laughing Jackass, Cat-bird (*Ælurœdus viridis*), and a Pitta (*Pitta strepitans*); the ground is covered with broken shells and among them is a stone used as an anvil.

The part issued in June 1909 is a special publication, entirely devoted to Mr. S. W. Jackson's recent trip to Northern Queensland in search of the nest and eggs of the Tooth-billed Bower-bird (*Scenopœetes dentirostris*). How well he succeeded, in company with Mr. Frizelle, in observing the birds' habits and in finally discovering several nests with eggs and young, will be seen by reading his long article, and Mr. White, at whose instance he undertook the journey, must be thoroughly satisfied. A coloured plate is given of the birds and several photographs of their nests and play-grounds. Mr. Jackson spent most of his time in the Barron River Valley, among the Tinaroo and Atherton jungle-forests, where the Tooth-billed Bower-bird is not uncommon. It makes a playground under a "lawyer-vine" and covers it with single leaves placed upside down, while it sits and sings near it; but finally deserts the place and builds a flimsy stick-nest to contain its two plain brownish eggs. The bird is a splendid mimic and is usually seen alone.

Space does not permit us to enter into further details of this remarkable expedition, but we must observe that nests and eggs of the Victoria Rifle-bird and Spotted Cat-bird were also secured (and photographed), besides those of many other rare species.

In a separate article Mr. Jackson describes as new the nests and eggs of the following species, from the Atherton district:—*Sphecotheres stalkeri* (pl.), *Oreocichla cuneata*, *Pœcilodryas albifacies* (pl.), *Acanthiza squamata*, and *Eopsaltria magnirostris*.

A nest of *Orthonyx spaldingi* is also depicted, as are the playground, nest and eggs of *Prionodura newtoniana*, discovered by Mr. G. Sharp, and the playground of *Chlamydodera orientalis*.

88. *Flower on the Zoological Gardens of Giza.*

[Zoological Gardens, Giza, near Cairo. Report for the Year 1908, and List of Animals. By Stanley S. Flower, Director. Cairo, 1909.]

Capt. Flower's Report on the progress in 1908 of the Zoological Gardens at Giza (well known to all visitors to Cairo) is satisfactory, although not quite so favourable as that of the preceding year. The number of visitors in 1908 was 243,974, and the actual amount of receipts was only £42 less than in 1907. The Menagerie in November 1908 contained 1303 specimens belonging to 369 species.

The most noticeable new bird added to the List in 1908 was the Nuba Bustard (*Lissotis nuba*), of which fine species the Director himself brought back five specimens when he returned from his expedition to the Blue Nile in September 1908.

Captain Flower's List of the animals that have been exhibited alive in the Gardens from the 6th of October, 1898, to the 5th of March, 1909, is also of much interest. The present Director took up his office in October 1898, and at once commenced a detailed list of the live-stock, which has been continued with great regularity ever since. Of the class "Birds," with which 'The Ibis' is alone concerned, examples of 366 species have been exhibited during the above-named period. The most notable of them is the Whale-headed Stork (*Balæniceps rex*), one of which has been nearly seven years at Giza and is still alive and well; but other rarities are in the List, such as *Balearica pavonina ceciliæ* and *Francolinus erkeli*. The maximum ascertained length of life in captivity in the Gardens of an individual of each species, so far as recorded, is mentioned in the List. The nomenclature and arrangement adopted are nearly the same as those of the List of Animals in the Menagerie of the Zoological Society of London.

89. *Fox on the Birds of the Isle of Wight.*

[A Guide to the Natural History of the Isle of Wight. Edited by Frank Morey, F.L.S. Birds. By Reginald H. Fox. Isle of Wight & London, 1909. 8vo. Pp. i–xx, 1–560; 32 pls. and map.]

This book, of which we have lately received a copy, covers the whole of the Natural History of the Isle of Wight, and includes not only Zoology, but Geology, Botany, and even Meteorology as well. The zoological portion, moreover, treats of the lower as well as the higher groups of animals, and thus will be found useful to those who wish for a compendium of the subject within the limits of a single volume.

As regards the Birds, with which we are more particularly concerned, the list extends over thirty pages, and gives details of the occurrence of rare species, the comparative abundance of those that are more common, and occasional notes on the nests and eggs, with the addition of a few plates.

An article of this description must of necessity be largely compiled from various sources, but the author at times relates his own experiences, and gives the latest information on such points as the increase of the Goldfinch and Tree-Sparrow, the present status of the Jay, Magpie, Raven, Wryneck, Hoopoe, Peregrine Falcon, and Kittiwake.

Mr. Fox acknowledges his great indebtedness to Messrs. Kelsall and Munn's work 'The Birds of Hampshire and the Isle of Wight,' with its much fuller treatment of Ornithology ; and the present list may advantageously be placed side by side with that book for purposes of comparison.

90. *Grinnell's 'Bibliography of Californian Ornithology.'*

[Pacific Coast Avifauna. A Bibliography of California Ornithology. By Joseph Grinnell, Cooper Ornithological Club.]

For those who are studying the Western Avifauna of the Nearctic Region this will be a very useful publication. It contains a list all such books and papers as relate "either as a whole or in any part to the Birds of California." As will be seen, the list is long and extends over 140 pages. It is nicely got up and clearly printed, and does great credit to Mr. Grinnell (the Editor of 'The Condor'), who has composed it for the Cooper Ornithological Club.

91. *Harington on the Birds of Burma.*

[The Birds of Burma. By H. H. Harington, Major, Indian Army, M.B.O.U., F.Z.S. Rangoon, 1909. 134 pp. 8vo.]

This is a series of popular notes on the Birds of Burma, the majority of which have already appeared in the 'Rangoon Gazette.' As now put together they form a useful source of information for those who wish to make a general acquaintance with the bird-life of Burma and find Blanford (not Blan*d*ford as spelt by Major Harington) and Oates' 'Fauna of British India' too bulky to be carried about conveniently. Besides notices of the habits and localities frequented by the birds, short informal descriptions are added of most of the species, which are sufficient to enable them to be determined in most cases.

At the end of the volume is given a complete list of the Burmese birds known to the author, with a table shewing their distribution in the different districts into which the country may be divided. Major Harington observes that the Northern Chin Hills are "absolutely unknown" and that the high peak of Saramati (12,000 feet) may probably have a Fauna of its own, so that there is still good work to be done in Burma by an enterprising Ornithologist.

92. *Hartert's 'Birds of the Palæarctic Fauna.'* *

[Die Vögel der paläarktischen Fauna. Von Dr. Ernst Hartert. Heft v. Berlin, 1909.]

The whole of the fifth part of the 'Birds of the Palæarctic Fauna' is devoted to the great Family Muscicapidæ, under which designation Dr. Hartert includes not only the Muscicapidæ proper, but also the Sylviidæ, Crateropodidæ, and Turdidæ of most authors. It is, no doubt, difficult to draw the lines between these four families, but we prefer the more familiar terms, although we admit that in many cases the task of distinguishing a Sylvian from a Thrush is severe.

The following ten new species and subspecies are described in this Part:—*Phylloscopus sibilatrix erlangeri* (Morocco); *Horeites flavolivacea intricatus* (China); *Sylvia undata toni* (Algeria, Morocco, Tunisia); *Prinia gracilis yemenensis* (Arabia); *Crateropus caudatus altirostris* (Mesopotamia); *Ianthocichla affinis oustaleti* (Yunnan); *Ianthocincla rufigularis assamensis* (Assam); *I. r. occidentalis* (N.W. Himalayas); *Trochalopteron lineatum grisescantior* (Western Himalayas); *T. lineatum gilgit* (Cashmir and Gilgit).

The true Thrushes will be treated in the next Part (VI.), which, we understand, will finish the first volume.

We may call attention to the change proposed by Dr. Hartert in the name of one of our familiar species. It is maintained by some writers that the *Motacilla hortensis* of Gmelin, which has been generally supposed to be the Garden-Warbler (*Sylvia hortensis*) is not that species but the Orphean Warbler (*Sylvia orphea*). Dr. Hartert accordingly wishes to adopt the name "*Sylvia hortensis*" for the Orphean Warbler and to call the Garden-Warbler "*Sylvia borin*," it being, in his opinion, the *Motacilla borin* of Boddaert (ex Buffon, Pl. Enl. 579. fig. 2). It may be remarked, however, that this identification is uncertain, and that if the change were adopted "*Sylvia hortensis*" would become quite useless as a specific name, as it would not be possible to decide whether it was intended to designate the Garden-Warbler or the Orphean Warbler. To shift the name of one species on to another must always occasion serious inconvenience. It is far better, when necessary, to reject an uncertain name altogether.

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* For notice of Heft iv. see 'Ibis,' 1907, p. 489.

93. '*The Irish Naturalist.*'

[The Irish Naturalist. A Monthly Journal of General Irish Natural History. January–September, 1909.]

In the January number Mr. R. J. Ussher has some notes on the occurrence of Black Redstarts in Co. Waterford; in March Mr. B. Jeffers gives us extracts from a Lighthouse diary; in June Mr. A. Williams notices the White Wagtail from Co. Dublin (*cf.* p. 183); in July Mr. Ussher writes on land-birds' nests found in holes on islands; in August Mr. C. B. Moffat discusses the use of domed nests, and Mr. Kohn records a Golden Oriole from Co. Cork; in September Prof. Patten furnishes an account of the Ornithology of The Skerries, Co. Dublin, a district apparently frequented by few but the most ordinary sea-birds.

94. *McGregor on Birds from Mindanao, Philippines.*

[A Collection of Birds from Northern Mindanao. By Richard C. McGregor. Philipp. Journ. Sc. iv. p. 67.]

In the last months of 1907 a collection of birds was made in Northern Mindanao by Mr. Andres Celestino, of the Philippine Bureau of Science. The 42 species to which they are referable are mostly of wide distribution, but six of them had not been previously recorded from Mindanao, and the capture of *Chloropsis flavipennis* is especially noted, as there was an uncertainty about the occurrence of this species in the island.

95. *Madarász on Mongolian Birds.*

[Dr. J. v. Madarász. Contribution to the Mongolian Ornis, with Descriptions of some New Species. Ann. Mus. Nat. Hung. 1909, p. 175.]

Dr. v. Madarász gives an account of a collection of birds made in Transbaikalia by F. Teichmann and F. Weiske in April–July 1908. The specimens are referred to 44 species, amongst which 4 are described as new—*Tharrhaleus tetricus, Montifringilla cognata,* and *Pœcile tunkanensis,* from the Tunkan Mountains, and *Tetrastes orientalis*, an eastern form of *T. bonasia. Tharrhaleus tetricus* and *Montifringilla cognata* are figured (tab. 4).

96. *Madarász on certain Wild Geese.*

[Zur Naturgeschichte der Wildgänse, v. Dr. J. v. Madarász. Ann. Mus. Nat. Hung. 1909, p. 304.]

The author states that the Wild Goose called *Anser neglectus* by Sushkin visits the Steppe of Hortobagy in Hungary every autumn and remains until the following April. He describes the colour of the bill in summer and winter and figures it (tab. v. figs. 2, 3).

He also describes a supposed hybrid between *Anser fabalis* and *A. albifrons,* and gives a figure of its head.

97. *Mearns on New Birds from the Philippines.*

[Additions to the List of Philippine Birds, with Descriptions of New and Rare Species. By E. A. Mearns. Proc. U.S. Nat. Mus. xxxvi. p. 435 (1909.)]

In the seventh of his series of papers on Philippine Birds the author describes as new *Phabitreron samarensis, Muscadivora palmarensis, Otus steerei, Prioniturus malindangensis, Yungipicus siasiensis, Rhinomyias ruficauda mindanensis,* *Cryptolopha malindangensis*, *Pseudotharraleus malindangensis*, *Brachypteryx malindangensis*, *Hyloterpe apoensis basilanica*, *Zosterops goodfellowi malindangensis*, *Crytostomus jugularis mindanensis*, *C. j. woodi*, *C. j. dinagatensis*, *Pyrrhula steerei* (from Mindanao, alt. 5750 ft.), *Dicurus balicasius mindorensis*, and *Chibia cagayanensis*. The addition of four known species to the Philippine List is recorded. Amongst these is a Phalarope (*Phalaropus hyperboreus*).

The discovery of a second Bullfinch in the Philippines is of great interest.

98. *Mearns on Birds from the Philippine Islands, Borneo, Guam, and Midway Island.*

[A List of Birds collected by Dr. Paul Bartsch in the Philippine Islands, Borneo, Guam, and Midway Island, with Descriptions of Three new Forms. By E. A. Mearns, Assistant in Zoology, U.S. National Museum. Proc. U.S. National Mus. xxxvi. p. 463 (1909).]

A complete list is given of the birds collected by Dr. Paul Bartsch at the above-named localities during the voyage of U.S. Steamer 'Albatross' (1907–8) to the Philippine Islands. Three forms are described as new to science—*Rhamphalcyon capensis smithi* and *Pycnonotus goiavier suluensis* from the Philippines, and *Collocalia bartsi* from Guam.

99. *Phillott on Persian Falconry.*

[The Baz-Nama-yi Nasiri. A Persian Treatise on Falconry. Translated by Lt.-Col. D. C. Phillott. London: B. Quaritch, 1908. Pp. i-xxiv, 1–195; 25 illustrations.]

This most interesting book consists of a translation of a work written in 1868, lithographed first at Teheran and afterwards at Bombay. As will be seen from the translator's Introduction, the author, Jaymur Mirza, was one of the nineteen sons of Husayn 'Ali Mirza, Governor of the Province of Fars, who was once offered the crown of Persia. He was in London in 1836, but returned to Teheran and died there in 1874. He was well known as an exceptional authority on Falconry.

After the Persian Introduction, the treatise begins by considering the "Yellow-eyed Birds-of-Prey"—Goshawks, Sparrow-Hawks, the Serpent-Eagle, the Eagle-Owl, the Lämmergeier, the Osprey, Harriers, and so forth. The second part treats of the "Dark-eyed Birds-of-Prey"—that is, the remaining species used for hawking. In this section is included much information of a curious character on the capture of the birds, their training and management, their food and diseases, their parasites and the like; the whole composing a treatise which is most interesting to read, and is full of that "Sage Advice" which is the heading of one of the chapters.

Many illustrations make the book still more attractive, some being facsimiles, some copies of curious Persian paintings, and some depicting the birds themselves.

100. *Revue Française d'Ornithologie.*

[Revue Française d'Ornithologie. Scientifique et Pratique. Publiée par M. Louis Denise, 14 Rue Antoine-Boucher, Paris. Nos. 1–4.]

The institution of a new Bird-Journal will interest all readers of 'The Ibis,' and we have much pleasure in calling attention to the first four numbers of the 'Revue Française d'Ornithologie,' which has been lately started. If we understand rightly, it is proposed to comprise in it articles on birds both of a scientific and of a practical character, and M. Menegaux, the Assistant for Ornithology at the National Museum in the Jardin des Plantes, is ready to receive such communications at 55 Rue de Buffon, Paris.

We will say a few words about the principal articles in the four numbers already issued.

In the first part (May 1909), after a short preface on the objects and plan of the new periodical, we find an essay by M. Raspail on the utility of the Rook (*Corvus frugilegus*), which we are told is seriously menaced in some parts of France, while M. Simon, a well-known authority on the Trochilidæ, commences a series of notes on that favourite group of birds.

In the second number (June 1909) M. Gounelle describes a new Humming-Bird from Colombia as *Polyerata cyaneotincta,* allied to *P. amabilis,* and M. Menegaux gives us a list (with remarks) of a collection of birds recently received from Cuba. No species are new, but many of them are rare (*Geotrygon chrysia, Todus multicolor,* &c.), and form valuable additions to the French National Collection.

In No. 3 (July 1909) Dr. Dubois discusses the relationships of the three nearly allied Asiatic Thrushes: *Turdus fuscatus, T. naumanni,* and *T. ruficollis*; and M. Paris writes notes on the birds of the Department of Côte-d'Or.

No. 4 (August 1909) is headed by an article on a new species of Tanager of the genus *Calliste* by Mr. C. E. Hellmayr (now of Munich): Mr. Hellmayr calls it *Calospiza palmeri*, but we see no reason why the prior generic name *Calliste* should be discarded. Five examples of this new and remarkable Tanager were obtained by Mr. M. G. Palmer in the district of Choco, Western Colombia. The same collector obtained examples of *Nemosia rosenbergi, Calliste johannæ, C. emiliæ,* and other rarities. In this number M. Menegaux records the occurrence of two examples of *Dendrocycna arcuata* at Aigues-Mortes, on the southern coast of France. This makes an addition to the Gallican Avifauna. Many other notes and notices will be found in the new Journal, to which we heartily wish success.

101. *Salvadori on a Species of Jay.*

[Nota intorno al *Garrulus melanocephalus,* Gené. T. Salvadori. Boll. Mus. Torino, No. 607, vol. xxiv.]

Count Salvadori has examined the typical specimens of Gené's *Garrulus melanocephalus* in the Museum of Turin, and has come to the conclusion that they are not identical with the *G. atricapillus* of Geoffr. St.-Hilaire, as is usually supposed. He points out the differences. The locality of Gené's *G. melanocephalus* is Baalbek in Syria, not Mount Libanus. The exact locality for *G. atricapillus* is not known.

102. *Salvadori on the Birds of the Duke of the Abruzzi's Ruwenzori Expedition.*

[Il Ruwenzori, vol. i. Relazioni Scientifici. Uccelli. T. Salvadori.]

In the Duke of the Abruzzi's famous expedition to Ruwenzori little attention was paid to Ornithology, and only 45 specimens of birds were brought home. These are referred by Count Salvadori to 36 species. Four of these species, believed to be new, have already been described *. Count Salvadori now gives us a list of the whole collection with the necessary remarks.

103. *Sharpe and Chubb on Bornean Birds.*

[Notes on a Collection of Birds from Sandakan, N.E. Borneo. By R. Bowdler Sharpe, LL.D., and Charles Chubb. Ornis, xiii. p. 137 (1909).]

The subject of this paper is a collection made by Mr. P. M. Graydon on or near the Lamey Estate on the Kinabatangan River, about one hundred miles from Sandakan in N.E. Borneo. The district is mostly covered by dense jungle and is not more than from 200 to 500 ft. above the sea-level.

After a list of the five principal papers already published on the birds of this part of Borneo, the examples of the 100 species represented in the collection are enumerated and discussed. They are mostly well-known Bornean forms. A few field-notes are added.

104. *Snethlage on new Amazonian Birds.*

[Novas especies de Aves amazonicas das collecções do Museu Goeldi. Pela Dr. Emilia Snethlage. Bol. Mus. Goeldi, v. p. 437 (1909).]

Dr. Emilia Snethlage, who is now, if we are correctly informed, the head of the Bird-department in the Goeldi Museum at Pará, describes 16 new species and subspecies of Amazonian Birds from specimens in that Museum :—*Thalurania furcata intermedia* from the Rio Tocantins ; *Pteroglossus*

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* Boll. Mus. Torino, No. 542. *Cf.* 'Ibis,' 1907, p. 212.

reichenowi from the Rio Tocantins; *Chloronerpes paraensis* from Pará; *Thamnophilus huberi* from the Rio Tapajoz; *Dysithamnus capitalis squamosus* from the Tocantins; *Anaplops berlepschi* from the Tapajoz; *Grallaria macularia berlepschi* from the Tocantins; *Xiphorhynchus multostriatus* from the Tocantins; *Myiobius erythrurus hellmayri* from Pará; *Euscarthmus johannis* from the Rio Purus; *E. zosterops minor* from the Tocantins; *Euscarthmus griseipectus* from the Tocantins; *Setophaga pallida* from the Tocantins; *Pipra fasciata purusiana* from the R. Purus; *Pachysylvia muscicapina* from the Tapajos; and *Sporophila leucoptera æquatorialis* from Mexiana.

We venture to remark that some of the characters which are given to separate the subspecies are rather finely drawn. But we much rejoice that the authorities of the Goeldi Museum are continuing to work out the products of the vast region of the Amazon and its affluents.

105. *Stone on the Cuckoos of the Genus* Piaya.

[A Review of the Genus *Piaya*, Lesson. By Witmer Stone. Pr. Ac. N. Sc. Philad. (1908).]

In re-arranging the Cuckoos in the great Collection of Birds at Philadelphia Mr. Stone was induced by the discovery of the neglected type of *Piaya macroura* to undertake a study of all the species of that genus. Two species of *Piaya* are unmistakable—*P. melanogastra* and *P. minuta* (called by Mr. Stone *P. rutila*). But *P. cayana* and its near allies form a very puzzling group. To enable him to understand them better Mr. Stone borrowed examples from other American Collections, and thus got together a series of 259 specimens, which gave him a good basis to work upon. The result is that *Piaya cayana*, according to him, is divisible into 11 representative subspecies, two of which (*P. c. caucæ* and *P. c. boliviana*) are now described for the first time.

Mr. Stone wishes to change the name of *Piaya minuta* to

P. rutila; but we think this proposal is objectionable, as the exact type of Illiger's *Cuculus rutilus* cannot be certainly ascertained.

106. *Todd on a new Wood-Warbler from the Bahamas.*

[A new Warbler from the Bahama Islands. By W. E. Clyde Todd. Proc. Biol. Soc. Washington, xxii. p. 171 (1909).]

Mr. Todd describes a new *Dendrœca* from Abaco, Bahamas, which he proposes to name *D. flavescens*. It is most nearly allied to *D. dominica*, but distinguished by its longer bill and wholly yellow under parts.

107. *Winge's Report on the Birds of the Danish Lighthouses.*

[Fuglene ved de danske Fyr i 1908. 26de Aarsberetning om danske Fugle. Ved Herluf Winge. Særtr. af Vidensk. Meddel. Kbhvn. 1909.]

We are favoured by a copy of Dr. Winge's report on the birds obtained or observed at the Danish Lighthouses in 1908, being the 26th of this excellent series. In that year 1453 specimens of 73 species were forwarded to the Zoological Museum of Copenhagen from 38 Lighthouses, and other examples, making up the number to at least 2700, were noticed. The species most numerously met with in 1908 were *Alauda arvensis, Sturnus vulgaris, Regulus cristatus, Turdus iliacus, T. musicus*, and *Erithacus rubecula*. Of the last-named species, 188 examples were sent in, and at least 247 besides were taken.

Unusual visitors to Denmark in 1908 were *Alauda cristata* (March), *Pastor roseus* (May), *Parus cristatus* (July), *Ruticilla tithys* (Oct.), and *Muscicapa parva* (June). Many other interesting field-notes are given.

We venture to suggest to the Migration-Committee of the B. O. C. that similar lists of the birds captured at St. Catherine's or some of the other British Lighthouses would be useful for comparison.

XXXVIII.—*Letters, Extracts, and Notes.*

We have received the following letters, addressed "To the Editors of 'The Ibis'":—

Sirs,—I have just returned from three months' leave (17th May to 8th July), during which I have visited the Kághán Valley, the most northern strip of British India, and I think that my experiences there as regards bird-life may be of some interest to your readers.

This valley is about 100 miles long by 15 broad on the average, varying in altitude from 3000 feet at the entrance to 17,360 feet at its highest peak. In fauna and flora, as well as in scenery, it closely resembles Kashmir, which bounds it on the west. Altogether some 150 species of birds were met with, but as most of my time was spent at levels of above 10,000 feet, many others must have been found if I had been at lower altitudes. The following are some of the more interesting species:—

Ægithaliscus niveigularis (rare). *Hodgsonius phœnicuroides* (rather scarce). *Acrocephalus agricola* (common from 8000 feet to 10,000 feet, in patches of *Sambucus ebulus*, in which it was nesting, often a long way from water). *Ruticilla frontalis* and *R. rufiventris* (both fairly common, especially the latter). *Merula maxima* (nesting freely in juniper-scrub). *Accentor rufilatus* (scarce). *Pycnorhamphus carneipes* and *Propasser dubius* (a few pairs met with). *Pyrrhospiza punicea* (rare). *Carpodacus erythrinus* (abundant: some males were breeding in immature plumage). *Anthus maculatus* (common above 11,000 feet: Oates has not recorded it west of the River Sutlej). *Motacilla citreoloides* (abundant: about half the pairs were breeding in immature plumage; it does not therefore assume full plumage at its first spring moult). *Otocorys longirostris* (fairly numerous at the head of the valley, several nests were found). *Aquila chrysaëtus* (the common Eagle above 10,000 feet). *Spizaëtus limnaëtus* (I found one sitting on a single dried-up egg, and shot her for identification).

Lerwa nivicola (common locally, a most amusing and confiding bird).

Yours &c.,
C. H. T. WHITEHEAD.

Sehore, Bhopal, India,
12th Aug., 1909.

SIRS,—At the meeting of the B. O. Club held on 26th May, 1909, I exhibited an adult male specimen of *Muscicapa semitorquata* as being new to the Egyptian avifauna. In the report of that meeting (Bull. B. O. C. vol. xxiii. p. 93) I am credited with having exhibited a specimen of *M. collaris* as new to Egypt! I need hardly point out that the Collared Flycatcher (*Muscicapa collaris*) is a regular visitor to Egypt during the spring migration (*cf.* Shelley's 'Birds of Egypt,' p. 130).

In his 'Manual of Palæarctic Birds' (p. 256) Mr. Dresser includes *M. semitorquata* as a subspecies of *M. collaris.* It is really, however, in my opinion, a subspecies of *M. atricapilla.* In fact, adult males of *M. semitorquata* (or, as I prefer to call it, *M. atricapilla semitorquata*) only differ from those of *M. atricapilla atricapilla* in having the sides of the neck white (these white patches almost form a collar round the hind-neck), and in having a small white speculum on the wing. The amount of white on the tail is the same in both *M. a. atricapilla* and *M. a. semitorquata*—*i. e.*, white on the outer and inner webs of the first and second pairs, and white on the outer web only of the third pair of rectrices, whereas in *M. collaris* the white is restricted to the outer web of the first pair. Young males of *M. collaris* have no white on the tail at all, whereas in *M. atricapilla* young birds have the outer web of the first three pairs of rectrices white.

Yours &c.,
MICHAEL J. NICOLL.

Giza, Egypt,
1st August, 1909.

SIRS,—Probably some of the readers of 'The Ibis' are aware that I have been engaged, from time to time as opportunity allowed, on a new and greatly improved edition of my 'Nomenclature of Colors' (1886). I am happy to be able to announce that, after twenty years of necessarily intermittent labour, this most difficult and tedious task has at last been accomplished, and that arrangements have been made for its early publication, the Plates being already in process of reproduction.

The new work will present nearly 1350 colours, arranged scientifically and reproduced by a method which guarantees a faithful copy of the originals as to hue and tone—in fact, absolute uniformity throughout the entire edition,—and at the same time as great a degree of permanency as is possible with pigments now known to colourists. The standard of the original work is, of course, retained and as many additional colours are named as practicable. Obviously it is impossible to provide names for all of so large a number of colours; but those which are left unnamed may be easily designated by an exceedingly simple system of symbols, as may also the intermediates, both as to hue and tone. This renders the work practically equivalent to the actual presentation of more than 5300 named or otherwise designable colour-samples. In short, the work has been so carefully planned and executed that I have no doubt as to its adequacy to meet all the demands of naturalists and others who have use for a comprehensive colour-nomenclature and standards. The new edition will be of the same size (except for a slightly greater thickness, there being 64 plates instead of the 10 of the old edition), and will be sold for about $5.00 net, or only $1.00 more than the original work.

I am, Sirs, yours &c.,
Robert Ridgway.

Washington,
Sept. 9th, 1909.

The B. O. U. Expedition for the Exploration of Central New Guinea.—Mr. Walter Goodfellow, the Leader of the proposed "B. O. U. Jubilee Exploration of the Charles-Louis Mountains," returned to England on Aug. 6th with a good collection of living Paradise-birds, amongst which were examples of *Paradisornis rudolphi*, *Astrarchia stephaniæ*, and *Epimachus meyeri*, and is now making preparations for the new Expedition to the Charles-Louis Mountains. He hopes to be able to start about the end of this month, and to be landed on the coast of New Guinea early in the following January. He will be accompanied by Captain Rawling as Surveyor and Dr. Eric Marshall as Assistant-Surveyor (who are delegated by the Royal Geographical Society to map this utterly unexplored country), Mr. A. F. R. Wollaston as Medical Officer and Botanist, and two taxidermists, Mr. G. C. Shortridge and Mr. W. Stalker.

The Committee of the B. O. U., who superintend the arrangements for the Expedition, consist of Dr. F. D. Godman (Chairman), Mr. W. R. Ogilvie-Grant (Secretary), Mr. C. E. Fagan (Treasurer), Dr. Sclater, and Mr. Meade-Waldo.

It will be recollected that the scheme of the Expedition was originally brought before the Special Jubilee Meeting of the B. O. U., held on December 9th, 1908, by Mr. Ogilvie-Grant, and unanimously approved (see 'The Ibis,' 1908, Jubilee Supplement, p. 12; also Mr. Ogilvie-Grant's appeal for assistance, 'Ibis,' 1909, p. 194).

News of Mr. Boyd Alexander.—After finishing his work in the islands of the Gulf of Guinea and on the Peak of Kamerun (see above, p. 564), Mr. Alexander went to the Maninguba Range in the interior of Kamerun, where he stayed for two weeks. In a letter to his father, which we have been kindly allowed to see, this is described as a very interesting mountain with two crater-lakes on its summit. His collecting work being now finished, Mr. Alexander determined to visit Lake Tchad again, "to see what it looks like in the rainy season," and went straight across country to Ibi, on the Benué. Thence he took one of the Niger Company's steamers up to Yola, where his letter was dated on August the 20th. A few days after that he was intending to start on a fifteen days' march to Maifoni, and thence to prosecute his tour round Lake Tchad. After that plan has been successfully carried out, we trust that the indefatigable explorer will come home, and devote his attention to his fine collection of Birds, the result of his two great journeys, which await his arrival at South Kensington.

The proposed Introduction of the "American Robin" into England.—We believe that we are in agreement with the wishes of the large majority of ornithologists when we express a hope that the attempts to introduce the "American Robin" (*Turdus migratorius*) into this country will *not* succeed. We agree with the Editor of 'Nature' (Aug. 25th, 1909) that the experiment is "of a very interesting character," and that the bird in question is "cheery," its song "kill 'em, cure 'em, give 'em physic" being agreeable, except, perhaps, to the vendors of patent medicines. But our English gardens are fortunately the habitation of several melodious species of Thrush, and we should be much grieved if our Song-Thrushes and Blackbirds were displaced by intruders from other parts of the world. We know well what has happened in many parts of the globe where similar "interesting experiments" have succeeded, and where English Sparrows and Indian Mynahs have exterminated the native birds. According to our contemporary, seventeen American Robins turned out this spring near Guildford mated immediately, and commenced nest-building almost at once, and "now number between forty and fifty." Fears are entertained, it is said, that these birds may have retained their "migratory instinct," and on the approach of winter will leave England and become "hopelessly dispersed." This, in our opinion, would be the best thing that could happen. We prefer our *Turdus merula* and *T. musicus* to *T. migratorius,* in spite of its "cheeriness."

The Auckland Museum, New Zealand.—Mr. Lewis T. Griffin, who was for about two years (under Mr. W. L. Sclater) taxidermist at the Cape Museum, and afterwards in a similar situation at the Transvaal Museum, Pretoria, has recently moved to New Zealand, where he has become first assistant to Mr. Thomas Cheeseman, the Curator of the Auckland Museum. In a letter recently received by Mr. W. L. Sclater, Griffin gives a good account of this Museum, which is well-known for its rich Maori Collections, supposed to be the finest in the world. The Museum-building contains five exhibition-halls, besides the usual offices, and an extensive library. The main hall is devoted to the foreign Zoological Collections, and holds a series of groups in large cases, called the "African Group," the "Arctic Group," and so on, shewing the characteristic animals of the different Regions. The series of birds is now being re-mounted and is receiving fresh additions. Mr. Griffin describes Auckland as a lovely place with a climate like that of Cape Town, and is evidently much pleased with his new post, for which we believe he is well fitted. He will be pleased to attend to any special requirements of naturalists.

Bird-marking Experiments in England.—Mr. H. F. Witherby, the Editor of 'British Birds,' is inaugurating, in connection with his magazine, a scheme for marking birds in this country in a similar way to that employed at the German Bird-Observatory at Rossitten. It is hoped by this means to gain a more exact idea of the movements of individual birds than has ever been possible by any other method; and this should not only throw light upon the more general aspects of migration, but should tell us a great deal that is at present obscure with regard to particular points. For example, while we may know the general distribution of a species in winter and summer, we do not know the extent of the migration of individual birds; or, indeed, whether in such cases as the Song-Thrush and Robin, certain individuals ever migrate at all. The movements of sea-birds are very little understood, and much might be learned from marking a large number. This plan might also tell us what influence age has upon plumage, &c.; where a young bird, the birthplace of which is known, breeds; whether individuals return to previous nesting-haunts, and whether pairs come together again in successive breeding-seasons.

Many of the readers of 'British Birds' are taking the matter up, and it is expected that a large number of birds of all kinds will be "ringed." The rings are extremely light and do not in any way interfere with the bird's power of flight: all are stamped "Witherby, High Holborn, London," and bear a distinctive number, which in the smaller sizes is stamped inside the ring. It is hoped that anyone into whose hands a bird so marked should fall will send the bird and the ring (or, if this be not possible, then the particulars of the number on the ring, the species of bird, and the locality and date of capture) to the address above given.

The Lake-N'gami Expedition.—Two members of the Ruwenzori Expedition (Mr. R. B. Woosnam and the Hon. Gerald Legge) are again in Africa, exploring the little-known country round Lake N'gami. Information of their safe arrival on the 27th of June last at the shores of that lake has been received in a long and interesting letter written to Mr. Ogilvie-Grant, but they had a difficult task to get there. They were twice obliged to cross stretches of 120 miles without water, and the oxen and horses were forced to live entirely on sama, a little white water-melon, which was also boiled down in order to cook meat and to make tea. Leaving the railway at Vryburg, in Bechuana-land, they travelled due north through the heart of the Kalahari Desert. Crossing the Molopo River in April, they found it still held a little water, but were told that it would be entirely dry by August. Thence they struck slightly east, to a place called Kakia, just north of the 25th parallel, and passing Kokong, Okwa, and Ghansis, reached Tsau (or Tsao) on the Okovanga River. After being many months in the dry sandy bush-veldt they arrived quite suddenly in N'gami-land, with its wealth of tall papyrus, fine palms, and evergreen trees. The silent wastes of the desert were replaced by teeming masses of birds and animal life of all sorts. Lake there was none, at least not in the ordinary sense of the word, but there lay before them a vast swamp bordered on the south by the dry Kalahari, and on the north by a most amazing and intricate system of rivers and a vast expanse of marshes, which are dry in summer, but are inundated with water from the north during the winter. The travellers are busy in collecting birds, mammals, and other animals, and hope to be able to get a complete series of the fishes of Lake N'gami, which are very little known, and are specially required at South Kensington.

A new Fossil Bird from the Lower Pliocene.—The last issued Part of the 'Proceedings' of the Zoological Society of London (1909, p. 368) contains an account by Mr. W. P. Pycraft of the fossilized remains of a small Passerine bird from Gabbro, near Leghorn. After a detailed description Mr. Pycraft comes to the conclusion that the remains are those of a Pipit (*Anthus*), and resemble most nearly those of the living species known as Berthelot's Pipit (*Anthus bertheloti*) of Madeira.

Assuming that this is correct, Mr. Pycraft proposes to adopt the name of the discoverer—Dr. Bosniaski—as the specific name of this species.

Anthus bosniaskii was obtained by Dr. Bosniaski from the Lower Pliocene of Gabbro, near Leghorn, a deposit which as yielded many fossils and which is particularly rich in fish-remains.

The only other remains of Passerine birds from the Lower Pliocene are stated to be a few fragments, representing the genera *Corvus* and *Turdus*, from Rousillon, Perpignan.

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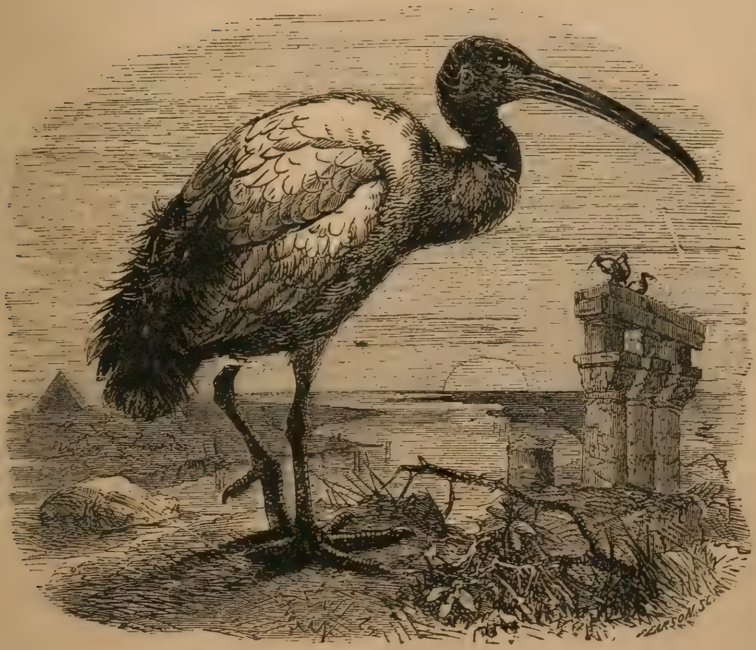

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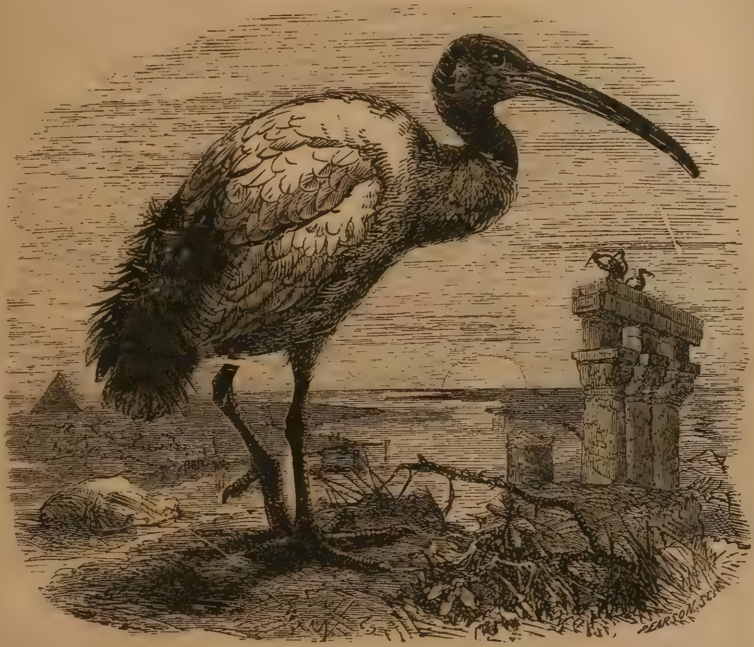

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The friends of the well-known Italian Zoologist, Prof. E. H. Giglioli, H.M.B.O.U., who will complete the fortieth year of his work at Florence in November next, propose to take this opportunity of acknowledging the great services that Prof. Giglioli has rendered to Science by presenting him with an album, containing portraits of his many friends and correspondents in all parts of the world. Those who are inclined to assist in this plan are requested to communicate with Dr. E. Balducci,

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